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The Elimination Of Some Inherent Difficulties In The Operation Of A Gas Compressor Plant By Proper Planning

By
Henry S. Farnsworth,
Project Engineer
The Fluor Corporation, Ltd.

The compressor plant discussed in the following includes conventional gas powered horizontal reciprocating compressors, requiring normal operating utilities.

Whether the plant is used for natural gas gathering, recycling or some of the many other services requiring gas compression, the fundamental operating conditions are generally the same.

Compressor Foundation

One of the first and major considerations in planning a compressor plant is the engine-compressor foundation block. This structure, if properly designed and installed, may eliminate a large portion of the mechanical vibration so often present in compressor plants. Of particular note, in proportioning a well designed engine-compressor foundation, is the fact that the concrete block is shallow and wide, rather than high and narrow. This insures the minimum lever arm between the centerline of the horizontal forces of the compressor unit and the center of gravity of the concrete mass. Figure 1.

Shallow blocks are not always possible or practical. This is particularly true where compressor house basements are indicated. In such cases, compensating design characteristics have to be emphasized. However, the minimizing of a large proportion of mechanical vibration at its source is usually possible by the correct proportioning of the required mass in the foundation. The normal ratio of mass to the horizontal forces should increase as the height of the block increases.

Gas Piping

The piping system can be the source of many operating difficulties within a plant. Good planning may eliminate some of these troubles.

Operating block valves, such as those controlling the gas suction and discharge, should be placed close to the compressor units they serve, with the engine fuel and starting air valves conveniently close. These items are fundamental, yet the gas block valves are frequently located a great distance apart or at comparatively inaccessible points in the header area. This is particularly true in multiple-stage compressor systems. In view of such complex piping, careful planning is necessary to insure an easily operable arrangement of valves.

Where plug cocks are used, clearance should be provided for pulling the plug out of the body without removing the whole plug cock from the line.

One of the latest trends in gas plants and plants for similar industries is to run piping above ground and as close to grade as practical. This arrangement has many salient features; chief among these is the ease with which pipe runs may be secured to concrete sleepers, thereby tending to diminish any mechanical vibration. Many of the earlier compressor plants included overhead, loosely supported, gas suction and discharge lines. These were frequently a source of annoyance and danger, due to the difficulty in supporting them and because of their excessive vibration.

There is another type of vibration inherent in gas compressor systems. This is manifested by pulsations in the gas flow. In most cases it is difficult to detect whether the vibrations existing in the piping system are caused by pulsations in the gas stream or from unbalanced mechanical forces. There are electronic instruments for detecting pulsations in flowing fluid and engineers specializing in this type of work. However, it has been found that pulsations in the gas stream have been detected by "pinching" either the gas suction or discharge valves at the compressor cylinders, to take a pressure drop across the valve of about 10 per cent of the operating pressure. If there is no noticeable decrease in vibrations after apply-

ing the "pinching" operation as described above, it may be assumed that the vibrations are transferred from mechanical forces. Where two or more compressor cylinders are involved, the "pinching" operation must be performed on all the valves feeding from or into a common header.

Pulsative gas flow has several bad features in addition to the obvious structural difficulties arising from its vibration. These are:

1. Difficulty in obtaining accurate orifice meter measurements.
2. Difficulty in control by conventional regulator valves.

The usual methods of reducing pulsations in the gas stream are:

1. Pulsation dampeners or pulsation dampening systems.
2. Adequately sized volume bottles.
3. Increasing the size of gas lines.

Experience indicates that the only readily predictable means of reducing pulsations in the gas stream is to install pulsation dampeners designed and manufactured for this purpose.

An older means of reducing the effects of pressure pulsations is by increasing the pipe diameters. This is usually accompanied by the installation of volume bottles which are preferably connected to the compressor cylinders. Whereas, increasing the pipe sizes as a means of reducing gas velocities and effecting more rigid conduits, has, in many instances, eliminated vibration to some degree, it still has not always offered a positively predictable means of overcoming the vibration problem. This same condition also seems to hold true for volume bottles.

A complete scientific explanation is complicated but the simplest explanation is that the pulsation dampener must contain two elements, namely a volume and a restriction. The combination must be sized properly. In certain special cases improper proportions put the system in what is called resonance. With resonance the effects of pulsations are increased instead of decreased. This may be the reason that arbitrarily increasing the sizes of volume bottles may result in amplifying the problems that are associated with pulsations, rather than minimizing them.

The gas lines or headers, both on the suction and discharge sides of the compressor cylinders, should be adequately secured near the ground on piers of sufficient mass to absorb the transferred vibrations. The lateral lines between the compressor cylinders and gas headers are usually comparatively short and concrete piers extending up from the compressor foundation can be used in conjunction with the supports required outside the building.

Among numerous "hold-down" clamps used for securing pipe to piers is a proven device now manufactured by one company for this purpose. Figure 2 shows a typical gas header system with "hold-down" clamps of this design in place, together with an insert showing the detailed model. Some of the main features of this clamp are that it has spring tension to allow longitudinal movement of the pipe and side clearance for lateral movement. The single spring also provides a certain amount of vibration damping.

If the plant consists of multiple compressors, the gas suction and discharge headers are apt to be rather extensive in length. These headers are ordinarily outside the compressor building and they should be supported at intervals sufficient to reduce deflection to a practical minimum. Figure 3.

A further consideration is the desirability of varying the pipe spans between supports to help reduce synchronous vibration. It has been suggested by Moerke and Newman that these supports be spaced at varying distances within a range of

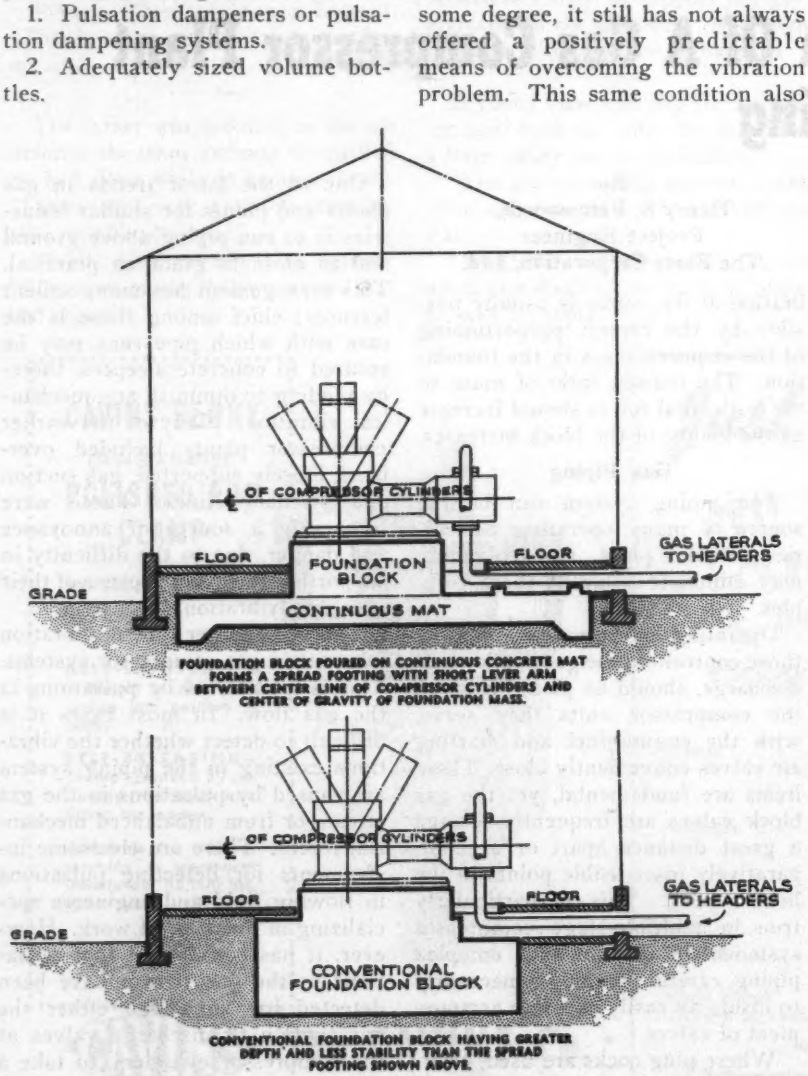

OF COMPRESSOR CYLINDERS
FLOOR
FOUNDATION BLOCK
FLOOR
GAS LATERALS TO HEADERS
GRADE
CONTINUOUS MAT
FOUNDATION BLOCK POURED ON CONTINUOUS CONCRETE MAT FORMS A SPREAD FOOTING WITH SHORT LEVER ARM BETWEEN CENTER LINE OF COMPRESSOR CYLINDERS AND CENTER OF GRAVITY OF FOUNDATION MASS.
OF COMPRESSOR CYLINDERS
FLOOR
FLOOR
GAS LATERALS TO HEADERS
GRADE
CONVENTIONAL FOUNDATION BLOCK
CONVENTIONAL FOUNDATION BLOCK HAVING GREATER DEPTH AND LESS STABILITY THAN THE SPREAD FOOTING SHOWN ABOVE.

FIG. 1
COMPARISON BETWEEN A CONVENTIONAL ENGINE-COMPRESSOR FOUNDATION BLOCK AND A BLOCK POURED ON A CONTINUOUS CONCRETE MAT.

about 10 per cent above and below the calculated maximum span of pipe, so that adjacent spans will be supported by piers having different spacing. If the calculated span is 15 feet, the adjacent span could be about 16 feet on one side and 14 feet on the other side.

The subject of mechanical vibration, due to the movement of machine parts and of pulsative forces in gas streams, has been a constant problem throughout the history of gas compressor design and operation. Several papers by M. L. Arnold, also N. H. Moerke and C. Newman have explored these problems with conclusions based on calculations and actual tests.

Linear expansion within the piping system, due to varying temperature, is a definite consideration. In many instances sufficient flexibility has to be provided in the piping runs in order to eliminate excessive stresses in the pipe. A typical example of this feature is found in planning the suction and discharge laterals between the compressor cylinders and the main gas headers of a multiple compressor plant. In such a case the gas headers would normally be anchored at the midpoint in length. During the period of start-up, or a rise in the operating temperature of the flowing gas, the headers will expand in length away from the anchor points, with resultant bending in the lateral lines. Control of stresses may be accomplished by sufficient length pipe in the lateral lines, applied either as straight runs or as expansion bends.

Points at which gas lines having any degree of pressure are restrained in any way should be secured by clamps or u-bolts. This is in preference to clips welded to the pipe. If it is necessary to resort to welded clips on pressure lines, the applied stresses and design features should be carefully considered, since, as we have already stated, some degree of vibration is usually present in the gas system.

Adequate drain valves, properly located in the bottom of gas headers, are a very important requirement. The lack of these items often results in the accumulation of condensed liquids which may well carry over into the compressor cylinders, with dangerous results. This can conceivably happen in long intake headers between gas coolers and compressor cylinders, even though gas scrubbers are in place.

The low side of gas headers should be free from all types of ridges or obstructions to flow, such as welding slag and screwed pipe ends, that might cause condensate to collect. In such cases the condensate could be highly corrosive to steel pipe.

Common practice seems to indicate that the gas headers should be grouped on one side of the compressor building and the utility lines on the other side. This procedure helps to keep the gas header area free from possible obstructions in arranging a safe and operable gas piping system. The advantage is more pronounced in the case of multi-stage compression units.

A very important feature that may well be considered in planning the piping system is provision for "blowing-out" the gas headers before actual startup of the plant. This requires that all the gas headers be provided with blind flange ends where they would otherwise be blanked off with welding caps. An arrangement of this type allows the headers to be purged of slag and other foreign particles by exhausting air or gas through them.

Cooling Water System

During the days of the engine-compressors, having massive sections and slow moving parts, large steams of jacket water at comparatively low temperatures were used. During this period it was frequently the rule to use open cooling water systems. With the development of engines and compressors, tending toward greater speeds and higher jacket water temperatures, corrosion and jacket "scaling" have become greater considerations, until closed cooling water systems are now the rule. Our discussion considers this type of system.

The jacket water system is divided into the following cooling areas:

1. Power cylinder jackets, including the exhaust manifold.
2. Compressor cylinder jackets.
3. Engine lubricating oil cooler.

The consensus of opinion among engine manufacturers seems to indicate an average temperature of the cooling water to the power cylinder jackets from 145°F to 150°F and about 160°F from the jackets. A 10°F rise through the jackets is desirable with a maximum of 15°F rise. The more water circulated with minimum temperature rise results in less stress in the jacket walls and other parts of the engine.

The lube oil enters the engine at a temperature fairly close to that of

Figure 2. Typical header system with "Holddown" clamps in place. Section of "Holddown" detail is shown by insert.

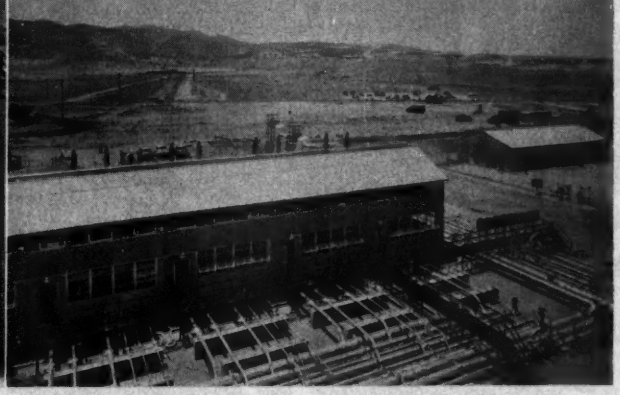
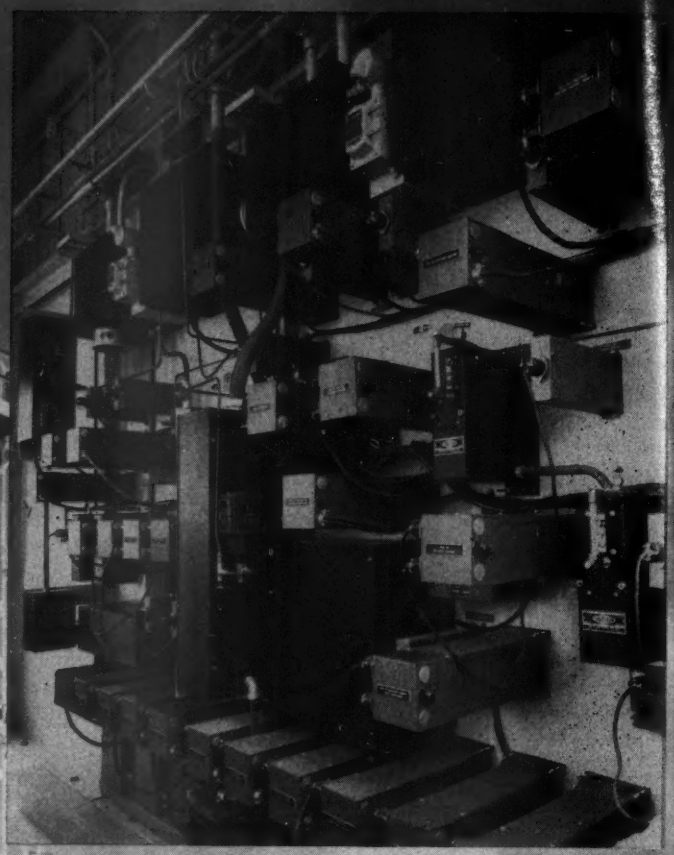


Figure 3. Arrangement showing lateral gas lines connecting compressor units and header system.



This view shows the back of the graphic control panel and of the electronic instruments for the UOP Platforming unit at the refinery of Rock Island Refining Corporation at Indianapolis, Ind. This Platformer is the first complete refinery unit in the United States to be controlled by electronic equipment.

Rock Island Refining Corp. Has First Complete Refinery Unit Controlled By Electronics

By L. E. Winkler
President
Rock Island Refining Corp., Indianapolis, Ind.

PROGRESSIVE thinking and action are vital to our refining operations. Since Rock Island Refining Corporation was organized in 1940, we have constantly sought to maintain our position as one of the most modern refineries in the world, dedicated to staying in the forefront of the petroleum refining industry as it produces higher quality products.

L. E. Winkler

Rock Island was the first refinery in the world to install a graphic control panel, a device which since has revolutionized the control of refinery processes. It was also one of the first refineries anywhere to build a UOP "stacked" Fluid Catalytic Cracking unit.

Now Rock Island has scored another "first"—a complete refinery unit which is instrumented by electronics.

The new type of instruments are controlling our 2,400 barrel-per-stream day UOP Platforming unit, which went on stream recently to produce motor fuel blending component. Although the Platformer has been running only a short time, the electronics equipment already has paid dividends through a smoother startup and easier handling.

Our decision to install electronic controls was based on economic factors as well as our desire to keep ahead of the industry in modern refining techniques. We took a long-range look at the potentials of this new type of equipment and ascertained that:

(1) It would increase the reliability of the Platformer's operation in cold weather by eliminating the possibility of freezing up of instrument transmission lines.

(2) It would do away with racks for the pneumatic tubing from the graphic panel to the battery area, thus reducing initial installation costs and problems connected with startup and maintenance operations.

(3) It would result in better control because of the increased sensitivity of electrical impulses.

Controls Work Perfectly

The electronic controls worked perfectly from the very beginning. On the day selected for the startup of the Platformer, oil was put into the unit at 9:30 a.m., and in less than three hours the unit was completely "lined out"—operating smoothly at the desired conditions. In less than two weeks, the unit had fully proved itself and had come to be considered a part of our routine refinery operations. Universal Oil Products Company designed, engineered and licensed the Platformer. UOP's instrument department engineered the installation of the electronic controls.

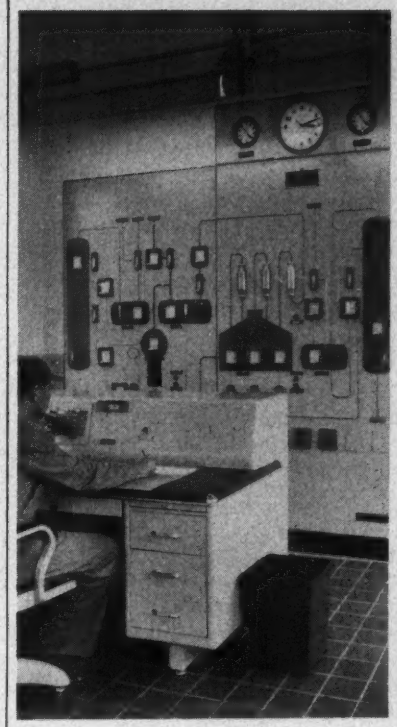
In our instrumentation, transmitters located in the battery area of the Platformer measure temperatures, pressures and flow and convert them to electrical signals. These go to recorders located on the graphic panel and to controllers, also located on the panel.

The controller compares the signals with a signal from the set point mechanism on the recorder that has been set previously by an operator. The controller sends out a current signal to the control valve, causing it to assume a given position. In the event the transmitter signal does not match the set point signal exactly, the controller modifies the current signal to the valve, located in the battery area. At the valve, the current signal is converted to a pneumatic pressure corresponding to the current signal in order to supply the power necessary to position the valve. This causes the valve to either open slightly or close slightly in order to bring the transmitter signal back into line with the set point signal.

Electronic Controls Act Swiftly

We have found that the electronic controls give almost instantaneous response when there are variations in temperature, pressure or flow through the Platforming unit. In addition, there are few moving parts in the equipment, thus reducing maintenance and wear. There is also complete interchangeability of parts, making it as easy to change parts as it is to change a light bulb.

We at Rock Island are proud to be the first refinery in the United States to install complete electronic controls to operate a major processing unit, and we believe sincerely that this instrumentation will go far toward helping us to consistently make better petroleum products from the crude oil that we process.



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the cooling water to the power cylinder jackets. For this reason the water to the oil cooler is somewhat colder than the water to the engine jackets. The difference in temperature of the water entering these two areas is more or less dependent on the size of the lube oil cooler and the quantity of water circulated through it.

The temperature of cooling water to the compressor cylinder jackets is usually close to that of the water entering the lube oil cooler.

Cooling water temperatures to the compressor cylinder jackets and the lubricating oil coolers vary considerably. Where the temperature of the water to these units is somewhere between 100°F and 130°F and the lube oil coolers are of average size, two jacket water streams are frequently used. This arrangement includes one stream of water serving the lube oil cooler and compressor cylinder jackets in parallel with each other. Another stream of water is then circulated through the engine power cylinder jackets at an influent temperature of between 145°F and 150°F. An alternative to this arrangement, still considering the same size oil cooler, is to circulate a single cooling water stream through all three cooling areas. In this latter case the water is circulated in parallel through the oil cooler and compressor cylinders, after which the total flow is recirculated through the engine power cylinder jackets and the temperature automatically controlled at the desired point. Of the two cooling arrangements described above, the former, employing two separate water streams, affords more positive temperature control. See Figure 4.

Another jacket water flow arrangement may be developed where higher compressor jacket water temperatures and larger lubricating oil coolers are used. This requires a shell and tube type cooler of sufficient size to circulate the full flow of jacket water needed by the engine power cylinders. In this case the jacket water is circulated in series through the lube oil cooler and engine jackets in the order named. Cooling water from the same stream is circulated through the compressor jackets in parallel. This arrangement is illustrated by Figure 5.

A number of variations to the above systems are used. In some instances gas compression ratios are low, or say less than two to one. Then circulating water through the compressor cylinder jackets is replaced by filling the jackets with oil or the use of air cooled cylinders. The comparatively small amount of heat induced is dissipated through radiation.

The jacket water system should be arranged so that the least amount of water pressure is exerted against the cylinder head gaskets. This is accomplished by discharging the water directly from the jackets into a surge tank and then pumping through the water coolers to the lube oil cooler and back through the jackets. The surge tank should be vented to the atmosphere and carry cooling water level above the rest of the system. The circulating pump should be located close to the surge tank with a large suction line, free from bends, thus reducing the possibility of cavitation to a minimum.

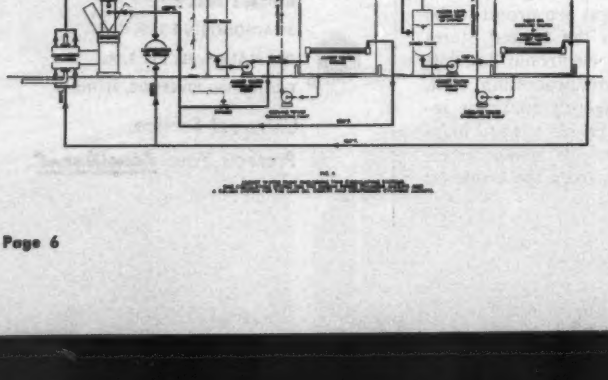
Starting Air

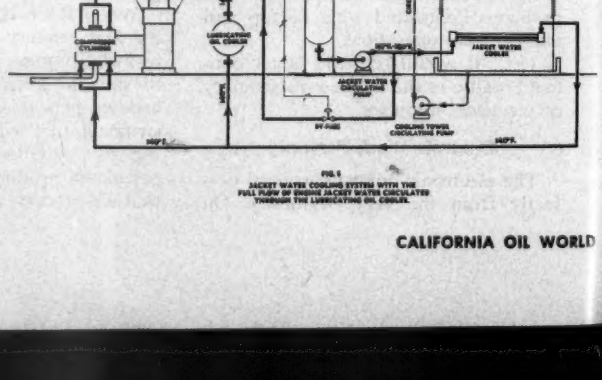
Starting air at 250 PSIG is believed to constitute one of the operating hazards. This belief assumes that the lubricating oil, which is generally present in the air stream, is subject under some conditions to ignition from the heat of compression. The history of explosions in starting air systems of this pressure is sufficiently convincing to warrant extensive research and protective measures. One means that has been considered logical in reducing this hazard is to circulate the air stream through a shell and tube type cooler on its way to the reservoir. A large proportion of the oil and water present may be knocked out in such a cooler, thus reducing the hazard from explosion as well as reducing operational troubles encountered as a result of water. Excessive water present in the air stream often makes starting difficult.

A check valve should be installed in the air line adjacent to the point at which it enters the power cylinder. This installation is definitely a requirement, since it constitutes a safeguard against flame entering the starting air line and igniting any oil which may be present. Sufficient storage capacity and adequately sized lines are very important requirements to be considered while planning the starting air system. L. F. Scheel covers the air volume requirements in a paper entitled "Development of Gas Engine Compressor Plants."

Exhaust System

The exhaust line from the engine through the muffler presents a hazard at times. This is in the form of exhausted fuel gas which has not been ignited. During a shutdown period leaky valves may allow fuel gas to collect in the exhaust line. "False-starts" may also produce the same effect.





When the engine is started this gas is ignited, causing an explosion. Heavily constructed mufflers installed in a vertical position have a tendency to help purge the system of pocketed gas and offer resistance to minor explosions. A more positive means of purging this system of gas pockets is to install an air jet in the line close to where it leaves the engine. This arrangement allows the operator to "blow-out" the exhaust system just before starting the engine.

Apart from the hazards described above, it is possible to utilize the exhaust stream for useful work in the improvement of operating conditions. This is accomplished by the installation of air-cooled mufflers which draw the heated air away from around the engine area.

Safety Considerations

At least one State Safety Code requires that blinds be located in gas lines to and from compressor cylinders in cases where there is any question concerning the tightness of the block valves. The conservative decision usually includes blinds for the protection of anyone working in or around the compressor cylinder. The same provision applies to gas scrubbers or similar units of equipment.

"Shut-off" valves should be located in the main gas inlet and outlet lines at a safe distance from the engine-compressor units. The preferable location for these valves is the plant boundary. The conventional method of shut-off is by air actuated remote control from a central station located at a safe and convenient point. Some of the safety codes require that these shut-off valves be located at a "safe distance" from the plant or major equipment. By observing the interpretation of the term "safe distance" in several plants, 300 feet seems to be the rule.

High liquid level alarms should be placed on all gas scrubbers to protect the compressors from liquid "carry-over." These alarms are usually float operated and connected to an electric relay for actuating an alarm or shutting down the compressor units.

The following are some of the precautions to safeguard personnel against lethal gases in the compressor system.

1. Air blower and necessary duct work located in the compressor house. This produces a positive circulation of air throughout the length of the building sufficient to sweep any accumulation of gases out of the building through the pipe trenches.

2. Double block valves and bleeders in gas lines to and from compressor cylinders. The bleeder is placed between the block valves.

3. Air ejector type evacuators are installed at each machine taking suction from the distance piece between the crank case and compressor cylinder for the purpose of creating negative pressure around the piston rod packing.

4. Gas analyzer installed with connections at each compressor cylinder and all other critical points.

The problems discussed are not assumed by any means to cover all the difficulties encountered in the average compressor plant. However, if these items are given due consideration, it is believed that much may be accomplished toward planning a satisfactorily operating plant.

The writer wishes to acknowledge the assistance of the following in contributing to the preparation of this paper: Messrs. L. F. Scheel, E. J. Flavin, A. M. Whistler, N. H. Moerke and C. Newman.

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This paper given before the 29th Annual Fall Meeting of C. N. G. A.

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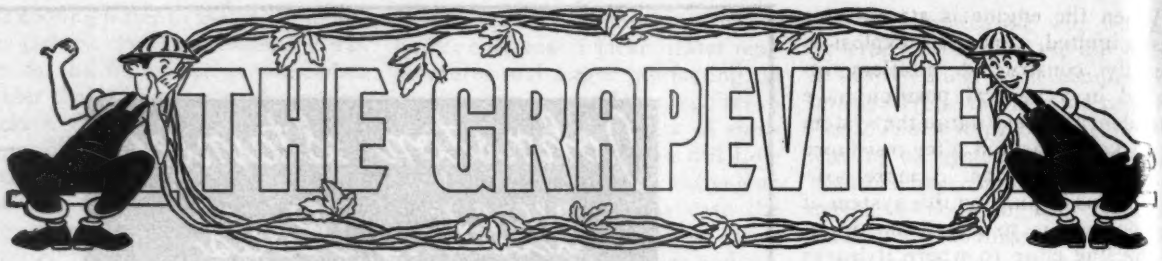

By RICHARD SNEDDON

The weird get-ups, particularly headpieces, that are worn by golfers now-a-days, so disguise the players that if one is not thoroughly familiar with their basic architecture, one has no more chance of recognizing them than one has of beating George "Whitefish" Trembley in a gin game. Frinstance at a golf game out at Annandale recently, Ollie Branyon, the sparsely thatched Flying Horseman, played in a foursome that included Jack O'Brien, vice president of Johns-Manville Company, from New York. There had been some minor bets made on various aspects of the game. After the striving was all over and the boys had showered, removed their golf regalia, donned their street clothes, and reassembled in the locker room, Jack O'Brien went up to Ollie and handed him a couple of dollars. "What's this for?" asked Ollie, and Jack replied, "That's what our side lost in the game." "Is that so?" said Ollie, "Well, I'd like to take your money but I wasn't in your foursome. The man who should be paying me is Jack O'Brien." "But I am Jack O'Brien," protested Jack O'Brien, and Ollie agreed somewhat resignedly, "OK, I'll take it but you sure don't look like Jack O'Brien to me."

Nineteen noted pioneer oilmen will be honored by the award of life memberships at the annual meeting of Petroleum Production Pioneers at Rodger Young Auditorium on December 4. They are Ralph Arnold, world famed geologist, now resident in Santa Barbara, and at the moment busy on a geological reconnaissance of the Navajo Indian Reservation in Arizona. Ralph has a string of degrees longer than the tail of Halley's comet and has had more interesting adventures over the years than Joe DiMaggio; John Augsburger, now California sales manager for Tryad Service Corporation, but for many years field superintendent for the Arthur N. Macrate interests, and widely known and much admired among the petroleum production people of this area; Cyrus Bell, one of the operators who brought the rotary drilling system to California, former president of Bell & Loffland, later Loffland Brothers drilling company, one of the biggest organizations of its kind in the world; and Ben Blanchard, early Union Oiler who operated the old mule shoeing shop for Union Oil Company in the dawn of Los Angeles petroleum history. Ben is now a quiet, gentlemanly, neatly attired chap, living in retirement out in Orange County.

Others on the list for the award are Neil Norris, early Standard of Cal superintendent who was later for a time vice president of Bell & Loffland, and has been associated with most of the famous names in the business from the turn of the century on; W. O. "Bill" Todd, another Standard Oiler of account, who was active in the first development at Lost Hills, later foraged about South America, and upon his return went into the contract drilling industry; R. C. Baker, president of Baker Oil Tools Company, pioneer equipment designer and manufacturer who began his oil career in 1895 with E. L. Doheny, and whose name is today the symbol of equipment quality in every corner of the world in which men drill for oil; Elmer C. Bolton, former field executive of the Ohio Oil Company, now an oil producer in his own right, supposedly retired but still dashing back and forth between El Segundo and Findlay, Ohio, at frequent intervals, and living snugly off his royalties the rest of the time; and W. M. "Brownie" Brown, another ex-Standard Oiler who spent much of his time at Murphy Coyote and was one of California's first rotary drillers. Brownie has a unique faculty for losing hats.

Then there are D. S. "Dave" Faulkner, former top executive of National Supply Company, originator of equipment export to the countries across the Atlantic, one of the founders of PESA, and a top pioneer by all measures; Tom Hickey, president of Hickey Pipe & Supply Company, a Coalinga boy who did right well for himself by furnishing tools to the oil field operators when and where they needed them most, and in the process made more friends than Dale Carnegie; George Kammerer, early field superintendent for Union Oil Company, and still active in the design and manufacture of fishing tools although supposedly long retired from business; H. F. "Fred" Owen, president of Berry Oil Company up in Maricopa, one of the outstanding pioneers of the San Joaquin Valley area and a power among the Valley producers for the past 40 years more or less; and P. M. Pike, chairman of the Board of Republic Supply Company, one of California's most successful purveyors of equipment and service, a chap with an intense interest in the history of California oil and a lucidity of expression that enables him to pass on most entertainingly to others the enjoyment that he himself derives from his memories of the past.

Also to be honored are R. E. "Dick" Sperry, former vice president of General Petroleum Corporation in charge of drill-

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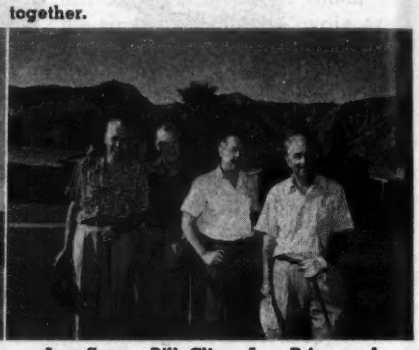
ing and production, now retired, a much beloved member of the petroleum fraternity with a wealth of interesting background and an army of boosters who can testify both to his altruism and to his understanding of oil production techniques; L. P. St. Clair, former president of Union Oil Company, organizer of the Independent Oil Producers' Agency, and for many years administrator of the Conservation Committee of California oil producers; W. F. "Bill" Taylor, old time Standard Oiler who was associated with many of the famed California pioneers in the beginning of his career, but spent much of his later years in foreign fields. There are to be made two posthumous awards, one to W. W. Orcutt, former vice president of Union Oil Company in charge of exploration, a member of the first graduating class of Stanford University in 1895, believed to be the founder of the oil industry's first geological department and unquestionably the founder of the industry's first oil pioneer association, the Pioneers' Petroleum Society, now defunct; the other posthumous ward goes to Ellwood Munger, pioneer oil writer and founder of the scouting service that bore his name. Ellwood Munger's activities have had an important bearing on California oil development and he is well deserving of a place in the pioneers' hall of fame.

Some chap by the name of Regler Pestbrook has been assaulting our cousin, Pick McIver in a Long Beach publication called the "Kiwanis Builder," with a barrage of verbiage that has Pick so embarrassed he has shaved off his mustache again and is going about with his face stark naked. It seems that this Pestbrook person blames the smog epidemic on

Photos taken at the Nineteeners Palm Springs get together.

Monte Lindmoe, Bill Beck, and Harold Davis smile for the photographer.

The New Yorkers are given high class transportation to the Thunderbird Ranch from the airport.



Lev Sacre, Bill Cline, Len Price and Ken Norris make up a golf foursome.

Bill Conroy, Bigshot elect, takes over the gavel from his predecessor, Len Price.

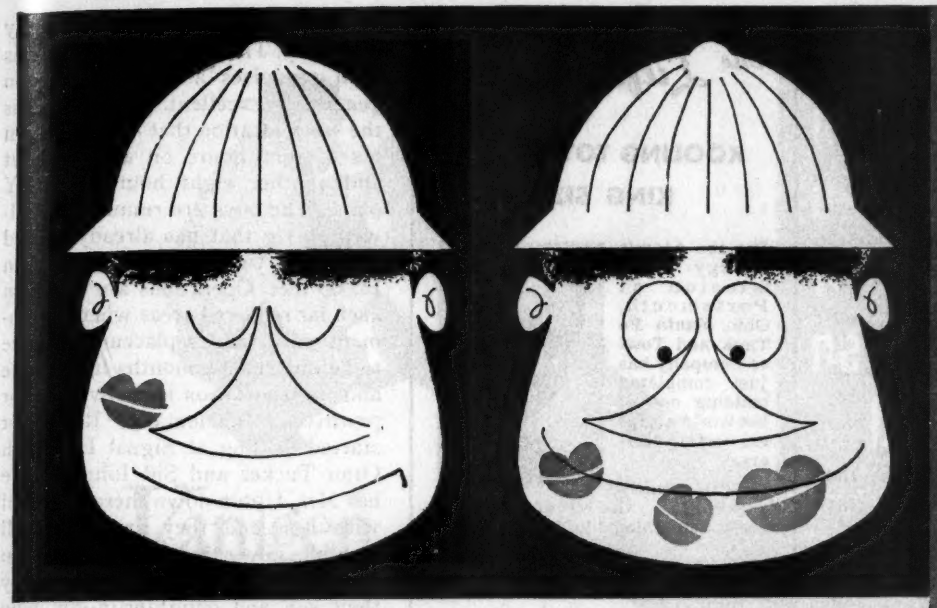
Henry Paulsen, Percy Hayes, and "Deet" Detrick in a warm-up session.

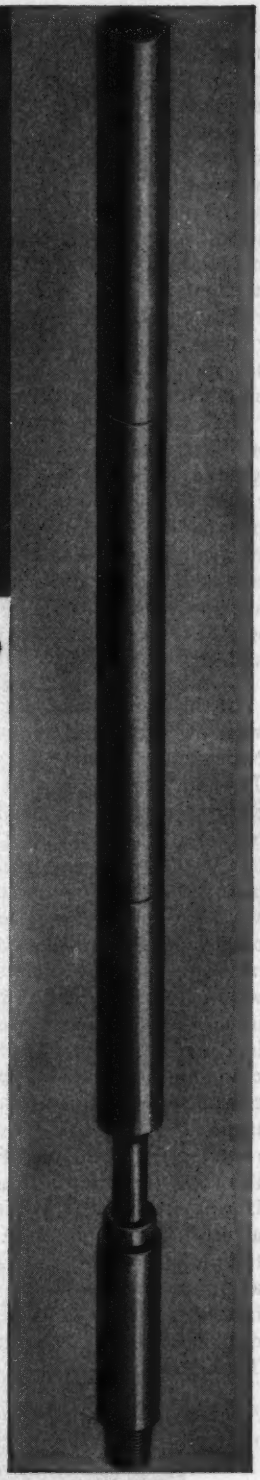
Jim MacDonald, Jack Rowland, Jack O'Brien, Ed Hanhausen, and Hank McAdams.

Jack O'Brien, Paul Berryman, Howard Chapman, and Ed Hanhausen.

Paul Huggins and his two sons, John and Paul, Jr.

C. H. "Tut" Tuttle, Al Dragge, and Howard Bratches have a jam session.





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FORMATION AND CASING TESTING — JOHNSTON

the McIver meerschaum and, of course, what the tall Caledonian burns in his junior incinerator. However, having ourself done some pretty extensive smog research in the past few months we are not at all convinced by the Pestbrook vitriolics. As a matter of fact, we are now practically certain that smog has a number of causes, chief of which are gift cigars, seismic shooting, the burning of church mortgages, and the smoking of finnan haddie. If, thus, the unwarranted attacks on cousin Pick are not halted at once we shall instruct our lawyers, Salmon, Gluckstein, Levinson, and McBagpipes, to start suit against the McIver defamers as soon as the papers can be drafted. Perhaps if we stick a couple of these free swinging gazabos with a libel or slander charge, other gentry of the same ilk won't be so careless with their accusations.

In the last issue of the Grapevine we told something of the Nineteeners' pilgrimage to the Thunderbird Ranch at Palm Springs and of the strange goings on at that delightful hostelry. We had hoped to have a few photographs accompany the story to substantiate the more extravagant claims but they didn't come along in time so they will be found reproduced in this issue. Although they are excellent pictures, however, they fail completely to show the dust clouds rising from the sand traps, the blue aura that surrounded the heads of the losers, the rosy glow that suffused the frontispieces of the winners, and all stuff like that there. Anyway, the pictures are reproduced here as proof, along with the scarred fairways, that the Nineteeners did have a recent outing at Thunderbird Ranch.

An interesting letter comes from Roy Upton, the Drillexco chap down in Belem, Brazil, where he is spending a week with Mrs. Upton after a prolonged stay in the sticks. The operation with which he is concerned is being carried on about 1000 miles from Belem proper, 100 miles or so from Manaus, and 65 miles up the Madeira River which Roy thinks is just as big as the Mississippi, regardless of what the geography books say. The river literally swarms with porpoises and the fishing in general is excellent. So isolated is the work location that a trip to town takes eight hours on a river boat and another eight hours by PBY plane. The boys are running an Oilwell 96 rig that has already drilled four wells, two of them to more than 13,000 feet. Operations are tough in such far removed areas where equipment parts and replacements have to be ordered six months in advance and transportation is really a major problem. Incidentally, Roy first started drilling at Signal Hill with Oran Tucker and Sid Johnson. He has Mrs. Upton down there in Brazil with him and they are both still breathless over the recent acquisition of triple grandchildren, presented by their son and daughter-in-law who live in Lakewood.

The Lufkin Line

KOOLING TOWER . . . KING SIZE

For the Atomic Energy Commission at Portsmouth, Ohio, Santa Fe Tank and Tower Company has just completed building one of the world's largest cooling towers.

Statistically speaking . . . the bill of materials reads something like this: . . .

- 1½ trainloads redwood structurals (70 carloads)
- 1 carload electric motors
- 1 carload 20-foot dia. fans
- 1 carload drive shafts and couplings
- 1 carload **LUFKIN Model 115-VB** Spiral Bevel Gear Reducers for fan drives.

It's a 40-cell tower, a total linear length of 1440 feet and has a cooling capacity of 185,000 gallons per minute.

Santa Fe, a member of the Cooling Tower Institute, is one of the leading manufacturers of induced draft cooling towers and has nearly 50 years experience in this field.

LUFKIN Type VB Heavy Duty Fan Drives are standard equipment on all **Santa Fe towers** . . . especially designed . . . **right angle spiral bevel gear reducers** . . . for induced draft **cooling tower service.**

Large multi-cell **Lufkin-Santa Fe** refinery installations recently placed in service are . . . Standard Oil of Indiana at Whiting . . . Union Oil of California at Oleum . . . Gulf Oil Corporation at Krotz Springs, Louisiana.

LUFKIN Spiral Bevel Gears Type VB are serving the cooling tower industry from coast to coast.

(Lufkin produces the finest . . . Gears . . . for Cooling Towers . . . Herringbone Reducers, double and single reduction . . . Pumping Units . . . 2-Cycle Gas Engines.)

Among our favorite oil stories is the one that we first heard being told by Frank Hill, as follows and to wit: One day Frank was driving his car on Signal Hill when suddenly his windshield became badly spattered with rotary mud. It wasn't windy and he wondered where the spray was coming from until he looked about and presently saw a fishtail bit projecting from the side of the hill and churning away like mad. Presently it stopped and a little while later an overshot came out, grabbed the bit and pulled it back into the hole.

Winners of the last one-night domino tournament at the Los Angeles Petroleum Club were Tom Wallace, Dee Taylor, and Elmer Wycoff, three of the most astute tile tossers in the entire nefarious business. The contest was a strenuous affair with the players striving cleverly and earnestly to outwit each other in the interesting arts of drawing and pegging, and the fortunes of war see-sawing first from one couple and then to the other. The only untoward development during the evening was the discovery that Paul Broxon was setting lighthouses with his left hand. This is a species of skullduggery that is not permitted in the upper eschelons of domino society and there is a distinct possi-

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bility that if this Broxon person doesn't mend his manners and morals he might have to spend the rest of his days languishing in the brig.

Word comes from E. L. "Mac" McDowd, the Shell scout, that he is having a lovely time sashaying about the northwest. His note to Dee Taylor is datelined from Denver, Colorado, and he tells of meeting lots of expatriated Angelenos, notably Gene Vallat, Bart Gillespie, and Walt Heathman, up in Calgary. He attended a football game with Walt in some pretty strenuous Canadian winter weather and shivered so much that he has sent home for his red flannels. Mac is doing the trip with Mrs. McDowd in a trailer which he says is comfortably warm but he coincidentally states that "for the present they are living in a hotel." Why anyone would leave a nice warm trailer to live in a cold hotel is something we don't quite understand.

By way of last minute roundup, Orrie Hedges is back home after a pretty rugged siege in the hospital. Swede Larson is back from his European jaunt, looking fit as the proverbial fiddle. The Geises are also home from a world tour that kept them out of their normal orbit for more than a year. And that is all for the minute. Cheerio!

Ray Miller Passes Away

Ray E. Miller, Advisor to Petroleum Chemicals Division of the Organic Chemicals Department of the Du Pont Company, and widely known throughout the oil industry, died on Nov. 17, in Doctor's Hospital, New York. After more than a quarter century of association with the oil industry, he joined Du Pont in 1946 as Sales Director for Petroleum Additives. He resigned active direction of sales for the division last year for reasons of health and continued in an advisory capacity.

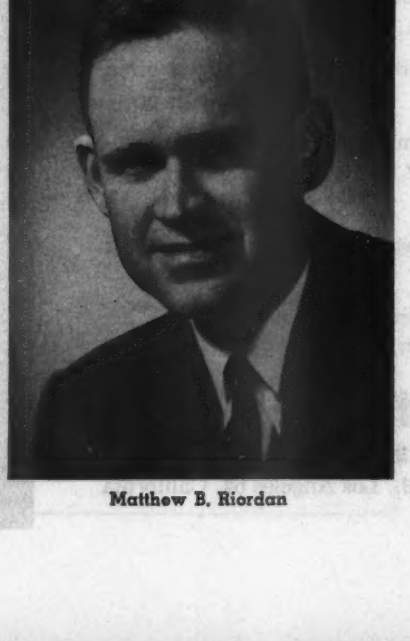
Mr. Miller was a member of the Board of Directors of the American Petroleum Institute. In 1920 he became Safety Engineer and Personnel Manager for the Marland Oil Company, now Continental Oil Company. Eight years later he was named Executive Secretary of the Natural Gas Association of America, and in 1943-44 was President of that organization. In 1934 he joined Hanlon & Buchanan, Inc., a Tulsa oil company as Vice President, a position which he held until becoming Vice President and Director of Warren Petroleum Corporation early in 1946. He joined Du Pont Company on September 1, 1946 as Sales Director for Petroleum Additives, and later became Sales Director of the Petroleum Chemicals Division. He was born January 18, 1895 in Burlington, Iowa, the son of Edward C. S. and Carrie B. Miller. He attended the University of Missouri and was a member of the Beta Theta Pi Fraternity.

He is survived by his wife, the former Dorothy E. Blanks, a daughter, Mrs. John V. Hogan of Forest Hills, Long Island, and three grandchildren.

Riordan Named V-P By BJ Service, Inc.

Matthew B. Riordan has been named vice-president in charge of engineering, research and development of BJ Service, Inc. (a wholly owned subsidiary of Byron Jackson Co.). The announcement was made by E. S. Dulin, president of Byron Jackson Co.

Mr. Riordan has been with Byron Jackson Co. since 1941. He has been associated with the company's oil well equipment research and electronic instrument development, including the BJ Vibrotron variable frequency temperature and pressure gauge.



Matthew B. Riordan

According to John B. Merritt, executive vice-president of BJ Service, Inc. the appointment is part of the company's increased emphasis on engineering research and development. BJ Service, Inc. provides cementing, acidizing, jet and bullet perforating, and radioactivity logging for oil wells, as well as marine and industrial chemical and cleaning services. Mr. Riordan will head the expanded engineering services with an enlarged staff and newly-constructed facilities at 6505 Paramount Boulevard, Long Beach, California.

The Central California Oil Scouts Association will hold its annual Christmas party December 16 at the El Tejon Hotel in Bakersfield. Barney Barnard, Richfield Oil, will be official host at the notable event, with Superior Oil's Pat Wright in charge of refreshments. Various committees associated with the Christmas get-together are composed of Ken Jensen, Tide Water Associated Oil; Glenn Black, U. S. Geological Survey, Cliff Edmundson, Shell Oil; Joe Dockweiler, Union Oil; Bob Rist, Monterey Oil; Hollis Bertrand, Honolulu Oil; W. G. McCombs, Seaboard Oil; Henry Clark, General Petroleum; Yale Langworthy, Bankline Oil; and Dick Vivian, Humble Oil & Refining. Also Les Herndon, Continental Oil; Jim Miller, Sunray Oil; John Ray, Conservation Committee of California Oil Producers; Bob Torrey, Southern California Gas; Ray Alexander, The Texas Company; Bruce Hill, Amerada Petroleum; Harold Ross, Intex Oil; Lannie Graff, Standard Oil; Dale Rodman, Ohio Oil; and Joe Parmenter, Western Gulf Oil. The party will open at 6 p.m. with cocktails to be followed with an expansive buffet supper. All members of the San Joaquin Valley oil exploration clan are expected to let nothing interfere with their attendance at the gala affair.

Mrs. Lona Gray, one of the country's few women oil operators, currently identified with Oregon's exploration, is a Los Angeles visitor. She is considering extending her field activities to Nevada.

Personalities IN THE NEWS

Kaiser Steel Moves McMeans to Oakland

George B. McMeans, vice president in charge of operations for the Kaiser Steel Corporation, will move his offices from the company's Fontana plant to the company's executive offices in Oakland, California, effective January 1, 1955. McMeans will report directly to Jack L. Ashby, vice president and general manager, of Kaiser Steel Corp. B. N. Dagan, Fontana works manager, will continue to report to McMeans in Oakland.

"McMeans, who directs all of the company's steelmaking and raw materials operations, will be located in the Kaiser Building in harmony with our policy to further strengthen our company through having all top management personnel located at the Kaiser Company's headquarters in Oakland", Ashby stated.

A veteran of almost 25 years in the steel industry, McMeans came to Kaiser Steel in 1947 as assistant general superintendent in charge of the open hearth and rolling mill operations. In 1948 he was named general superintendent, and in March 1950 was appointed works manager. His appointment as vice president in charge of operations came in 1952.

Prior to joining Kaiser Steel, McMeans held various production executive responsibilities with the John A. Roebling's Sons Steel Company in Trenton, New Jersey. He joined Roebling's upon receiving a Metallurgical Engineering degree from Lehigh University in 1935. While attending Lehigh, he worked part time and vacations in the Iron and Steel Foundries Electric Furnace, and Inspection Departments of the Allegheny Steel Company in Brackenridge, Pennsylvania.

In the summer of 1953 McMeans made an extended world tour, visiting steel industries in Japan, Australia, India, South Africa, Austria, Germany, Belgium, France, England, and South America.

McMeans is a member of the American Society for Metals, the Association of Iron and Steel Engineers, and the American Institute of Mining and Metallurgical Engineers. He is a member of the Executive Board of the National Open Hearth Committee and a member of the Committee on Manufacturing Problems of the American Iron and Steel Institute. In addition he has been active in community and civic affairs in the San Bernardino Valley, adjacent to the steel mill.

McMeans, his wife, Virginia and their three children presently reside at 760 Santa Clara Avenue, Claremont, California. They plan to take up residence in the Bay area in the near future.

Everett and Everett Appoint Nicholas A. D'Arcy, Jr.

Everett and Everett Engineers of Santa Paula announce the appointment of Nicholas A. D'Arcy, Jr., 7821 State St., Huntington Park, California, telephone LOgan 8-4223, as representative and agent for the areas of California, Nevada and Arizona. The engineering firm of Santa Paula in addition to performing consulting engineering and plant design, have patented and are manufacturing: Tuned Pulse Traps for problems encountered in pulsating flow of liquids and gases; Surge Traps for elimination of shock and water hammer occurring during loading operations on tank trucks and tank car loading racks, and aircraft fueling; and Acoustic Filters for intake and exhaust silencing for boilers, furnaces and engines.

Present at the meeting of the Los Angeles Chapter of Nomads at the Jonathan Club on November 3, 1954 were the following international guests and speakers of the evening: Left to right (standing) M. Hulshiza of D. & E. from Arabia; E. Arch Brown, formerly of Gulf Oil Corp. from Sicily; Jack Stovall of D. & E. from Dhofar; W. C. Lance of I.P.C. from Qatar; Patricio de Solar of Santa Fe Drilling Co. from Chile; Harold D. Devenish of Trinidad Oilfield Service from Trinidad; (seated) Gus J. Jure of D. & E. from Arabia; W. P. Ries of I.P.C. from Bahrein; Roy C. Zornes of I.P.C. from Iraq; Stan Hill, speaker; with Shell in Venezuela; A. C. Martin of Gulf Oil Corp. from Tunisia; Lee E. Courteau H. H. Mitchell of I.P.C. from Iraq; Thos. M. Webb of Texas Oil Co. from Venezuela.

Tate Advances At Standard

Appointment of John S. Tate as assistant treasurer of Standard Oil Company of California was announced recently.

John S. Tate

Tate joined Standard in 1947 after obtaining a master's degree in business administration at Stanford University. He was graduated from Dartmouth in 1941 and served four years in the Navy.

Joseph Levinson, widely known motion picture producer and president of Vincent Picture Corporation of Los Angeles, has taken an option on an 11,000-acre block in Uinta County, Utah, from New World Oil, Inc., Denver, according to reports from the Colorado City.

Harold W. Smith, American Liquid Gas Corporation president, has been appointed to serve as chairman with a Los Angeles LP-Gas regional committee. This committee will cooperate with civil defense officials in planning programs to safeguard the civilian population.

Beautiful Audrey Carol Williams, daughter of Universal Consolidated's Comry G. Williams, was the recent bride of Carlile Richmond Stevens at a wedding ceremony in Hollywood. The newlyweds met at Stanford University.

Rodney S. Durkee, board chairman of Lane-Wells Company at Los Angeles, has been elected vice president of the California Manufacturers Association.

Wallace F. Pratt, 69-year-old scientist of Carlsbad, N. M., was awarded the American Petroleum Institute Gold Medal for "Distinguished Achievement" at the recent 34th annual API convention in Chicago.

Oil men A. T. Jergins and C. M. Rood have been reelected directors of the Hollywood Turf Club.

Le Roy H. Hines has become associated with the investment firm of J. Barth & Company in San Francisco as petroleum consultant. Hines was formerly vice president of Northern Pacific Railway and in charge of oil development. Earlier, he was with Standard Oil Company of California in the land department and assistant to the vice president.

Officers to serve for the ensuing year were installed at the recent meeting of General Petroleum Corporation's Foremen's Association at the Rodger Young Auditorium in Los Angeles. Harry Nolen was named president, W. N. Laster, executive vice president and publicity chairman; R. A. Antunez, first vice president and program arrangements; Fred Johnson, second vice president and constitution chairman; H. V. Clark, third vice president and membership chairman; Murray Hamilton, fourth vice president, special assignments. R. M. Holland was appointed secretary and C. H. Busse, treasurer.

H. C. Smith Oil Tool Co. exhibit at the Permian Basin Oil Show held recently in Odessa, Texas. Standing, left to right: Arthur Marshall, general sales manager of the company; Ed Sievers, Odessa division sales manager, and Howard Autry, sales engineer, Odessa division.

Jasper W. Tully of San Francisco, Reserve Oil and Gas Company president, has resigned as partner in the brokerage firm of Mitchum, Tully & Company. A co-founder of the investment company in 1920, Tully in past years has been giving the major portion of his time to Reserve.

Wedding bells have rung for Actress-Dancer Vera-Ellen and Victor Rothschild, Los Angeles oil executive.

Mrs. Mary Pancoast (American Petroleum Institute) presents the traditional token of appreciation, a Los Angeles Desk and Derrick key chain, to Mr. Felix Chappellet vice president and general manager, Western Oil and Gas Association, following a forum on "California Offshore Oil" at a dinner meeting of the Club November 16 in the Music Room of the Biltmore Hotel. Serving as moderator, Mr. Chappellet was assisted by panel members Mr. T. C. Moroney, secretary, Honolulu Oil Corporation, San Francisco; Mr. Joseph Jensen, assistant to the vice president, Tide Water Associated Oil Company; and Mr. B. P. Eastin, manager of production for the Pacific Coast exploration and production of Shell Oil Company.

Rocky Mountain NEWS

Colorado—Idaho—Montana—New Mexico—Utah—Wyoming—Western Canada

Planning for a regional Rocky Mountain Oil Show, patterned after the Permian Basin show of Odessa, Tex. is entering an active stage with the appointment of James E. Emerick, Casper specialty house dealer, as chariman of the show's executive committee. After attendance at the University of Arizona and the University of Southern California, Emerick spent 18 years in the oil fields of California. He established himself in Casper after World War II service with the Corps of Engineers.

The show, first of its kind in the Rocky Mountains, will be staged next June at the Central Wyoming Fairgrounds where a new Industrial building and a large midway lend themselves to the display of oil country equipment. The show's executive board is the advisory board of the Casper Chamber of Commerce's Oil Council. Other oil men who will serve with Emerick in the planning and direction of the show are: John J. (Barney) Oldham, R. L. Manning Co., vice-chairman; Gene Caperton, petroleum vice president of the Casper National Bank, treasurer. George Goodin, co-publisher of Petroleum Information, a Rocky Mountain regional oil reporting service, is president of the Casper Chamber of Commerce and will serve as an ex-officio member of the executive committee.

Canada

A possible well-head gas pricing impasse may hinder the supply contract negotiations of the Trans Canada Pipeline Co. Canadian press reports indicate, the company, which has secured provincial and federal government clearance for its projected natural pipeline from Alberta to the heavy consumption centers of eastern Canada, is currently offering 15 cents per thousand cubic feet for gas delivered at the Saskatchewan border. It is not enough, gas operators assert, to cover the heavy exploration costs of deep drilling, and the further costs of gathering and processing. The price is all the pipeline company can pay, its officials maintain, if it is to keep natural gas at a retail price competitive to other fuels in eastern Canada. One suggested means of clearing the seeming block is some form of provincial government subsidy, as the Alberta government stands to make big returns from gas production on its Crown land reservations.

A new outlet for Alberta crude has gone into production in British Columbia where Standard Oil Co. (B. C.) has recently dedicated its ultra-modern North Burnaby refinery. Standard has been relying on California crude for its British Columbia operations. The $10,000,000 fluid catalytic refinery will be supplied with Alberta crude from the Trans Mountain pipeline. The refinery is rated one of the finest of its type on the continent. Its major sections include a two-stage crude distillation unit, a fluid catalytic cracker, a gas recovery plant and the catalytic polymerization unit.

Tide Water Associated Oil Co. and others have an apparent Mission Canyon discovery on the White Bear Reservation of Saskatchewan. The No. 4 White Bear recovered 672 feet of 32 gravity oil from the Mission Canyon section 4121-4131 feet. The apparent discovery is three-quarters of a mile northeast of No. 3 White Bear which had Mission Canyon shows but proved non-commercial.

The November allowable for Alberta is down 8392 barrels daily from October but stands 10,000 barrels higher than November 1953. Largest production drops have been ordered for Redwater which will be allowed 67,267 barrels daily down from 71, 518 barrels for October. The Pembina allowable has been rasied to 2500 barrels daily from 2000 barrels. Under normal conditions Pembina would rate a 5250 barrel allowable but wet weather and transportation difficulties in this new field have cut back production.

One and one-half miles north of the international boundary, opposite Hill County, Mont. British-American and Hudson's Bay Oil have reported a gas discovery at No. 10-8. The upper Shaunavon interval 3771-3784 feet has tested gas at a rate of 2,400,000 cubic feet per day. A second test in the interval of the zone 3785-3792 feet recovered gas at the rate of 4,200,000 cubic feet per day. The discovery has been shut-in.

Husky Oil and Refining Co. Ltd. had made its second purchase of a refinery in as many weeks. Trans Empire Oils Inc. has sold its Moose Jaw Sask. refinery to concentrate on exploration and production in western Canada. The latest purchase will give Husky a refining capacity of 18,500 barrels daily when planned expansion is completed. The Moose Jaw refinery will utilize, as far as possible, the medium and heavy crudes now produced in Saskatchewan. Husky recently acquired the Fort William, Ont. refinery of the Riverlake Oils Ltd.

A British Columbia 44,000 cubic feet per day gas discovery is also on the books at Pacific Petroleums Inc.'s Buick Creek wildcat, 40 miles north of Fort St. John. The test was on a 66,000 acre block farmed out by Canada Southern Petroleums Ltd.

North Dakota

The Signal Oil and Gas Co., which had its beginning in the Signal Hill field, Long Beach, in 1922, has placed a new natural gasoline plant at Tioga in operation. The natural gasoline is being shipped through the Service Co. pipeline to the new Standard refinery at Mandan. The LPG will be marketed in North

Dakota and adjoining states by Signal Perfect Fuels Inc. The residue gas is waiting a market pending two sets of proposals now before the North Dakota Public Service Commission. The commission will rehear, in December, the proposition of North Dakota Natural Gas Transmission Co. to supply eastern North Dakota with the gas. A hearing on a similar proposal by Northern Natural Gas Co., Omaha, has been indefinitely postponed by the company. The plant has a capacity of 35,000,000 cubic feet of gas daily and includes a hydrogen sulphide plant.

South Dakota

South Dakota, the 29th state to establish crude oil production, will soon enter the ranks of refining states also. Great Plains Refining and Development Co. has announced plans for a 3,000 barrel per day capacity refinery at Rapid City. It will be the state's first significant refinery. South Dakota has three refineries but two of them are not operating and none has a capacity above 200 barrels daily. The Rapid City plant will cost about $3,000,000 to construct.

Montana

Oil Basin Pipeline Co. has begun the shipment of products through its recently completed 235-mile line connecting the refining center at Billings with the eastern Montana distribution center at Glendive. The Glendive terminal facilities will be in operation by December 1. The eight-inch line was laid at a cost of $5,500,000.

Nine miles east of a Carter Oil Co. failure drilled in 1953 in the Whiskey Butte area of Daniels County, Richfield Oil Corp. has staked an 8700 foot Silurian test. It is No. 1 Modic and will be located in the Whitetail area on acreage farmed out by Carter. The Carter failure had shows in the Mississippian and Devonian but recovered only oil and gas cut mud on tests.

Two miles northwest of Wolf Creek, Roosevelt County, where it drilled a Mission Canyon discovery in 1952, Continental Oil Co. is drilling No. 1 Landon as a 6600 foot Mission Canyon test. The Wolf Creek discovery had a pumping potential of 185 barrels oil per day while the off-set pumped 41 barrels oil and 38 barrels water per day. Both have been shut in.

Wyoming

Two miles east of the great field at Salt Creek, northern Natrona County, Stanolind Oil and Gas Co. have completed their first test of the Sherwood Unit with a flow gauge of 83 barrels oil per day. The No. 1 Unit, is producing from a Lakota sand section 11,017-11,032 feet with total depth 11,512 feet. The gravity is 38.5.

In the Park County portion of the Big Horn Basin, Sun Oil Co. has completed its Ralston Unit deepening test with a flow gauge of 251 barrels per day of 52 gravity oil. Testing difficulties were encountered with oil freezing in the well because of the presence of carbon dioxide gas. The well was completed in 1953 as a 200 barrel per day discovery in the Frontier. However, a rapid production decline prompted a resumption of drilling to test the Madison limestone which was dry at total depth 13,288 feet. The Permian age Phosphoria was productive in the interval 12,640-12,680 feet.

In other noteworthy Big Horn Basin activity the deepest test so far drilled in this basin has been abandoned. Anderson-Prichard abandoned No. 1 Blue Ridge Unit, Washakie County at total depth 14,780 feet in the Phosphoria. The test was midway between the World and Little Buffalo Basin fields, both of which produce in the Tensleep (Pennsylvanian) and Phosphoria.

The first off-set to the Forest Oil Corp's. Grieve discovery which bids fair to be the leading Wyoming discovery for 1954, has been completed with a flow in excess of 1000 barrels per day from a sand identified by operators only as a Cretaceous age zone. The discovery was completed this summer for the same flow in an area of central Natrona County which had had very little previous exploration. The operators have not released an exact gauge on either well but the discovery flowed at a rate as high as 2400 barrels per day on a drill stem test. The second offset is now drilling. A second wildcat on the 25,000 acre unit is now approaching critical depths. The unit is in the south-eastern portion of the Wind River Basin.

Albany County, which has some scattered small production in the Laramie Basin of southeastern Wyoming, is witnessing an increase in exploration. California Co. is currently drilling a Tensleep test at No. 3 Seven Mile Unit. Recently announced are two other Tensleep tests just west of Laramie. Mississippi River Fuel Corp. has filed notice for No. 1 Parker, southwest of Laramie and No. 1 State directly west of the university city.

In Hot Springs County, Mobil Producing Co., Rocky Mountain producing subsidiary of Socony-Vacuum Oil Co., has shut in No. F-22-32-G, Skelton Dome area, after gauging a gas flow of 1,500,000 cubic feet per day from the third Frontier. Total depth was 7030 feet plugged back to 3688 feet. Two miles northwest, Mobil drilled a Madison failure at No. F-44-25-G with shows in the Phosphoria and Tensleep.

Nebraska

LaGloria Oil and Gas Co. has announced a ten-well series of tests in the Denver Julesburg Basin. They will be on acreage farmed out by British-American Oil Producing Co. The first test is drilling in Banner County (in partnership) with Great Basins Petroleum Co. It is the No. 1 State.

Rock Hill Oil Co. and Twin Oil Co. are swabbing at No. 1 Vrtatko, Kimball County, where they have reported a recovery of 300 barrels of fluid in eight hours. A core in the D sand 6002-6022 recovered 14 feet of saturated sand. The test is two miles east of the Enders field where both companies have substantial production in the D and J sands.

At another Kimball County test James D. Sloss has swabbed 120 barrels oil per day after sandfract at No. 2 State. Testing is in the J sand interval 6216½-6223 feet. Before the sandfract operator was swabbing two barrels per hour.

Colorado

West of principal previous production in Logan County, Frontier Refining Co.'s No. 1 Frasco 2 is shut in for storage following a flow of 235 barrels oil in four hours.

The D sand has flowed 246 barrels oil in ten hours at S. D. Johnson and Cosden Petroleum Co.'s No. 1 Rosener, Adams County discovery.

1st with a JAR SAFETY JOINT

*featuring *adjustability in the hole*

*and **full opening*

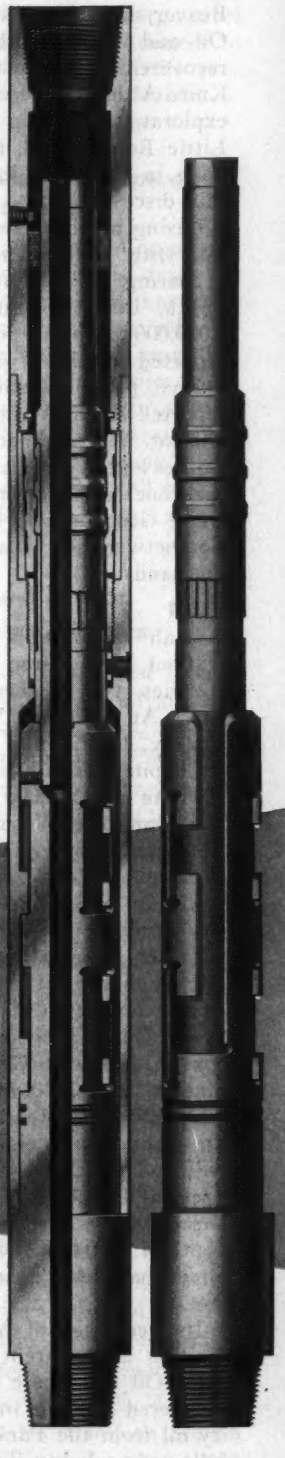
BOWEN *PRESENTS*

SEALED LUBRICATION

— FOR LESS WEAR

— REDUCED SERVICING

— CONSTANT TRIPPING TONNAGE



SEALED TYPE I BOWEN JAR SAFETY JOINTS are filled with oil and sealed top and bottom. The Sealed construction enables the tool to transmit circulating fluid at any pressure and prevents any contact between the well fluid and the working parts of the tool. With this arrangement, the moving parts work in a bath of oil and advantages are gained thereby as follows:

Constant Tripping Tonnage: The tripping tonnage does not increase or decrease regardless of the presence of sand or oil in the well fluid. The tripping tonnage can be varied only at the will of the operator.

Lubrication: The oil bath extends the life of the Friction Slip and Friction Mandrel and practically eliminates wear on any other parts.

Infrequent Servicing: These Jars can be used to perform several jobs before it is necessary to service them and the servicing procedure is simplified. The Floater is an important part in SEALED TYPE I BOWEN JAR SAFETY JOINTS. It automatically moves up or down the Washpipe maintaining a pressure balance within the tool and avoiding excessive pressure on the Seals.

SEALED TYPE I BOWEN JAR SAFETY JOINTS are compact combination units designed to provide the services of both rotary jars and safety joints. They are installed as safety devices in strings during testing, coring, reaming, drilling, sidetracking and washing over operations and are also used during fishing operations. At the will of the operator they will either deliver heavy upward or downward blows against a stuck string or fish – or they can be disengaged to salvage all the string that is above them.

***ADJUSTABILITY IN THE HOLE**
You can increase the tripping tonnage without coming out of the hole.

****FULL OPENING**
Oversize circulation hole permits unlimited use of wire line tools and allows passage of large volumes of fluid.

Outstanding Advantages as a Jar

The tripping mechanism in SEALED TYPE I BOWEN JAR SAFETY JOINTS is a straight pull mechanical type.

Torque free operation eliminates any aggravating tendency to release fishing tools, reduces equipment wear, and avoids hazards.

Because the tripping mechanism is purely mechanical, heavy blows can be struck despite packing failures or high temperatures and the same heavy blows will be delivered regardless of whether the string is elevated slowly or rapidly.

The tripping pull can be increased while the tool is in the hole or the tripping pull can be either increased or decreased while the complete tool or just the Bowl Assembly is at the surface.

After considerable service, the wearing parts in SEALED TYPE I BOWEN JAR SAFETY JOINTS can be replaced easily and economically and the tool will regain all the properties of a new one.

Outstanding Advantages as a Safety Joint

SEALED TYPE I BOWEN JAR SAFETY JOINTS will deliver the full torque capacity of the string in either direction.

At the will of the operator, the Bowl Assembly can be separated from the Main Mandrel Assembly of the tool to salvage all of the string that is above it.

Later the Bowl Assembly can be reengaged with the Main Mandrel Assembly in the hole for subsequent recovery operations.

Write for descriptive literature.

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SEALED TYPE I BOWEN JAR SAFETY JOINTS

Two zones of saturation, both containing about four feet of saturation were encountered in the D sand which has been perforated in the intervals 6120-6124 and 6125-6129 feet.

Twelve miles west of the Little Beaver, field Ryan Oil Co.—Davis Oil and Potter Drilling Co. have recovered 1000 feet of oil at No. 1 Knox. Although there has been some exploratory drilling west of the Little Beaver field, there has been none in the immediate vicinity of this discovery.

Casing has been set and Gem Oil Co. with Potter Drilling Co. are preparing to perforate at No. 1 Smith, Logan County. A flow of 3,000,000 cubic feet per day has been reported for the D sand.

Five porosity zones have been reported for a Washington County wildcat. Alfred Ward and Sons—Barnes and Brown have encountered the zones in the D and J sands at No. 1 Gebauer with a good separation between the oil and water bearing sands.

Utah

Utah exploration has been rewarded with three apparent discoveries, two of them oil and one gas. At Chapita Wells, Uintah County, Continental Oil Co.'s No. 2 Chapita Wells has flowed gas at the rate of 2,500,000 cubic feet per day from the Wasatch formation. The test is three miles south of No. 1 Chapita Wells which was completed in 1953, 62 barrels of oil per day from the Mesaverde.

Carter Oil Co. has obtained 25 gravity black oil from the Green Rivver formation at No. 2 Bluebell Unit, Duchesne County. The recovery, from the Green River formation, was 3240 feet of fluid of which 2790 feet was black oil. Nearest production is eight miles northwest where the Green River produces at Roosevelt. Carter will drill ahead with a new anticipated total depth of 9650 feet. Top of the Green River has been estimated at 7055 feet.

Its second test of the Desert Creek Unit is an apparent discovery for Shell Oil Co. where No. 2 unit has recovered 1128 feet of clean 40 gravity oil from the Paradox. The flow followed acidizing. Top of the Paradox is 5200 feet. Total depth is 7230 feet plugged back to 5338 feet. The first test was abandoned in April.

Magcobar Opens New Office

With the formal opening of its new office and laboratory building in Houston on November 19, Magnet Cove Barium Corp. began a new era in its history of service to the oil industry. For Magcobar's new facilities mean better mud service for the future as well as years of accomplishment for the company which began operations in 1940 in Magnet Cove, Arkansas.

Present officers of Magcobar are: Willard Johnson, president; Orien Van Dyke, vice president; George Moore, sales manager; Floyd Enz, comptroller; and Charles Talbot, production manager.

Since its founding in 1940 by Willard M. Johnson and Harry B. Brown, Magcobar has contributed greatly to the oil industry by raising product quality standards while lowering the price of drilling mud. Many new products for the control of drilling mud problems have come from the Magcobar laboratories.

The new building is located at 3403 Buffalo Speedway in one of Houston's newest industrial areas. The building is of modern design with end walls of brick and north and south all-window curtain walls. Wide overhangs protect the window walls from the sun. Porcelain panels below the windows provide colorful trim. The building is of lift-slab construction and has an area of 29,360 square feet. A detached garage has an area of 3400 square feet.

General and executive offices, a research library, and snack bar are in the south wing of the building. Executive offices, which are paneled in rare woods, overlook a landscaped patio.

Magcobar has provided every facility for drilling mud research and product development in the new Houston headquarters. The various laboratories are located in the north wing. Three laboratories are devoted to research and the development of new products. A field service laboratory is equipped with complex instruments for running tests on problems too complicated to be solved by the men in the field.

In the analytical laboratory a constant control is kept on all Magcobar products and production samples are double checked to insure uniformity. A laboratory has also been provided for the use of the geological department, whose chief job is searching for and testing new ore deposits to assure an adequate supply of Magcobar, Magcogel and other drilling mud materials.

The engineer training laboratory is equipped to give Magcobar mud engineers the best schooling in drilling mud testing and servicing. In addition to this laboratory's function as a school for Magcobar engineers, it also serves oil industry personnel who wish to take advantage of Magcobar's training courses.

Magcobar's resources today far surpass the original mine at Magnet Cove, Arkansas. The deposit at Magnet Cove, the world's largest known barite reserve, still furnishes the major part of Magcobar mud weight. The high quality ore is processed at the mill in Malvern, 12 miles from the mine. The Malvern mill has the most modern equipment for the processing of barite. Beginning where the raw barite ore is unloaded onto a continuous belt conveyor from gondola cars that link mine and mill, the route of the native barite through the mill is streamlined to speed the raw materials through the crushing, screening, flotation, de-watering, and drying processes at the rate of 2,000,000 pounds day. A giant 7-story furnace, which dominates the Malvern skyline, was installed at the mill last year. It stands 70 feet high and measures about the same footage around its mid-section. Built primarily of brick, the huge "barrel oven" has 14 separate hearths which literally "cook" Magcobar mud to a uniform quality.

To increase its facilities for the production of Magcobar mud weight, two new barite plants were built last year. The first of these is in Brownsville, Texas, located to serve the southern Gulf Coast area, Mexico, and South America. Because of its location, the plant receives high-grade ore from Mexico and other foreign sources.

Sufficient warehousing space is available at the Brownsville plant to promptly serve drilling operations in the lower Gulf Coast area and Mexico with Magcobar and other mud materials. It is designed to double its capacity, if needed.

The other new barite plant is located in New Orleans, Louisiana. The plant's location on New Orleans deep water Industrial Canal, close to Gulf

Coast drilling activity, will lower transportation costs and speed delivery of Magcobar in the area. This installation processes imported and domestic ore for rail, truck, barge and deep water movement to the consumer. Special equipment is provided for the processing and warehousing of quebracho and other drilling mud chemicals. Facilities have also been provided for the production of granular barite aggregate for use in heavy concrete coating of oil and gas transmission lines.

Magcogel is produced in the company's bentonite plant located at Greybull, Wyoming. This plant is one of the larger industrial installations in the northwest region of the United States and is recognized as the most modern and completely equipped bentonite mill in the world. Here high quality naturally occurring colloidal bentonite is processed under carefully controlled conditions to insure uniform high quality.

In addition to these plants Magcobar has clay mining facilities at Zavalla, Texas. Plants for manufacturing oil mud and oil emulsion compounds are located at Houston and Odessa, Texas and New Iberia, Louisiana. Feeder warehouses to assist the dealer organization in giving prompt service are located in New Orleans, New Iberia, Houston, Corpus Christi, Casper, Wyo., and Olney, Ill.

Magcobar mud engineers are located throughout the oil country, where they are on call night and day to take care of emergencies and drilling mud problems that arise. They travel in laboratory-equipped field cars—or by plane or boat when the territory requires it—to give accurate at-the-well analyses of the mud and make recommendations for changes in mud treatment desirable for successful completion of the well.

The Magcobar dealer organization forms the vital link in Magcobar's Canada-to-the-Gulf Coast chain of service. More than 400 of these dealers are located throughout the oil industry, carrying large stocks of Magcobar muds and chemicals to help meet the demands of the drillers.

In November, 1949, Magcobar became a subsidiary of Dresser Industries, Inc. Willard Johnson, president of Magcobar since its founding, was elected a director of Dresser in November, 1950 and was named vice president of the parent company in June, 1953.

Grant Introduces New Reamer

Grant Oil Tool Company, a pioneer in the development and manufacture of oilwell reamers, is now featuring a well engineered line of these important drilling tools, designed to handle the entire range of reaming operations. Cutter assemblies are simple to replace, but cannot be removed accidentally. They are available for any model in three different types that suit a wide diversity of subsurface conditions.

The line includes a three-point, near-bit reamer with one set of cutters for assuring full hole gauge as the bit wears, and for use as a fulcrum in directional drilling where drill collar support is required near the bit; a three-point regular reamer with one set of cutters in the middle of the body for reaming and stabilizing in normal drilling; and a six-point stabilizer reamer with two sets of cutters staggered so as to contact a greater section of hole. This latter is especially good for reaming just before setting pipe. Grant's nine-point reamer with three sets of staggered cutters is specifically designed for straight-hole drilling in hard formations.

The bodies of these reamers are of streamline design to minimize hole restriction, and yet are of sufficiently rugged construction to withstand the highest torque. All Grant roller cutter reamers are designed to be run into the hole with either end up, thus making them more versatile tools and reducing the need for subs. Also note that the cutters are set at an angle to give maximum shearing action combined with a tendency to screw out of the hole.

American Pipe Awarded Contract

American Pipe and Steel Corporation of Alhambra, California has been awarded a contract by Firestone Tire and Rubber Company for the manufacture of large steel storage and shipping containers to be used in its guided missile program for U.S. Army Ordnance.

Improve Tank Announced By American Pipe

American Pipe & Steel Corporation announces a new design of frameless tanks for trailers employing important advantageous changes, permissible by ICC only since May of this year. The new construction and design make possible a net increase of approximately 3½% in gallons over that of other single barrel frameless units which use heavier steel. It meets all requirements of ASME code, as well as ICC.

Black, Sivals & Bryson Move to New Quarters

Ross B. Baze, West Coast District sales manager of Black, Sivalls and Bryson, Inc., announces the opening of new headquarters at 759 North Highland Avenue, Los Angeles 38. The telephone number is WEbster 1-1755.

Carbon Canyon Area Test Proves Duster

Having drilled to a total bottom of 5918 feet without penetrating anything of commercial interest, the Douglas Marcell, Operator, Puente Hills No. 1 exploratory well on Section 31-2s-8w at Carbon Canyon in San Bernardino County is off the board. In the east Hesperia area, Ord Oil Company's Ord No. 1 wildcat is drilling below 500 feet. At Adelanto, Adelanto Development Corporation's Adelanto Oil Well No. 1 on Section 7-8n-5w is drilling around 2300 feet. Northwest of the town of San Bernardino, E. H. Brawner's Laurabel No. 1 test on Section 25-1n-6w is temporarily idle at 995 feet.

B.S.&B. Issues New Catalog

Black, Sivalls & Bryson, Inc. announces the publication of catalog 37-15 on Automatic Blow Cases—gas powered high volume pumps that are completely automatic and operate on either air or gas. The unit receives liquid at low pressure and discharges it at pressures up to 2000 psi.

Designed for oil field production use, the BS&B Blow Case has three main applications: (1) as a booster pump to prolong the flowing life of a well, (2) in stage separation where it permits the second or third separator to operate at pressures as low as 3 to 4 pounds, and (3) as an automatic drip on low pressure gas lines.

Well illustrated with cutaway drawings in color, dimensional silhouettes, and detail perspective drawings, the new 4-page catalog section also gives fluid capacities and solves a sample problem on how to determine power gas requirements.

Free copies of this catalog may be obtained from Black, Sivalls & Bryson, Inc., Production Information Department, 7500 East Twelfth Street, Kansas City 26, Missouri.

Guiberson 1955-1956 Oilfield Equipment Catalog

The Guiberson Corporation announces a new enlarged catalog for the years 1955 and 1956, containing full descriptions, detailed engineering data, complete parts price lists and numerous illustrations of Guiberson equipment.

The catalog is strongly bound and printed throughout in large readable type on good heavy paper. Copy is confined to essential information and every listed item is priced and identified by individual part number. Exploded parts drawings assist in quick identification of replacement parts.

Setting and Removal Procedures are clearly outlined and a Surface Setting Stroke Table provided for each type of packer offered. The catalog is usable readable, accurate and complete. Copies may be obtained by writing The Guiberson Corporation, Dallas, Texas; or by request from any Guiberson Sales Representative.

California Research Laboratories Expanded

Construction of more than $1,500,000 in new facilities will be undertaken immediately at the Richmond (Calif.) laboratories of California Research Corporation, the company announced recently.

The expansion program is designed to modernize existing facilities and provide for anticipated future growth of the Standard Oil Company of California subsidiary.

Involved in the program will be erection of a new engine laboratory and a new wing on the main laboratory-administration building.

Contract for the engine laboratory has been awarded to the H. K. Ferguson Company and ground-breaking is scheduled to begin in the next few days.

The engine laboratory will have a basement and two floors for research laboratories, shop facilities and offices. Total floor area will be 41,000 square feet.

There will be fourteen soundproof cells in the structure for testing fuels and lubricants under operating conditions in auto, truck, aviation and marine engines.

The new wing on the main building will provide an additional 33,000 square feet of floor space for chemical laboratories and engineering offices. Planning will allow for the possible future addition of a third floor.

Latest concepts in laboratory design are being incorporated into both structures to permit the versatility required for efficient conduct of modern industrial research.

Lane-Wells Opens New Branch In Woodland

To serve the increasing needs of the South Sacramento Valley field, because of the mounting activity in that area, the Lane-Wells Company has opened a new branch in Woodland, it was announced by W. J. Taylor, Bakersfield District Superintendent. This location was selected as the strategic center for the quickest service to all parts of this area. The new branch is fully equipped to provide perforating service and well logging service on the usual 24-hour a day basis. It is under the direction of Joseph L. Newman, Elwood B. Harris and Paul D. Knox, all experienced Lane-Wells personnel. Quarters for the new office have been taken at 433 College Street.

Boys Camp Sponsored by Oil Industry To Open Again

The R. M. Pyles Boys Camp, Porterville, California, will be host to hundreds of youths again next year thanks to the generosity of the men and women of Southern California's oil industry. The camp will be open in 1955 from June 13 to August 24, according to an announcement made by R. M. (Bob) Pyles, founder of the camp.

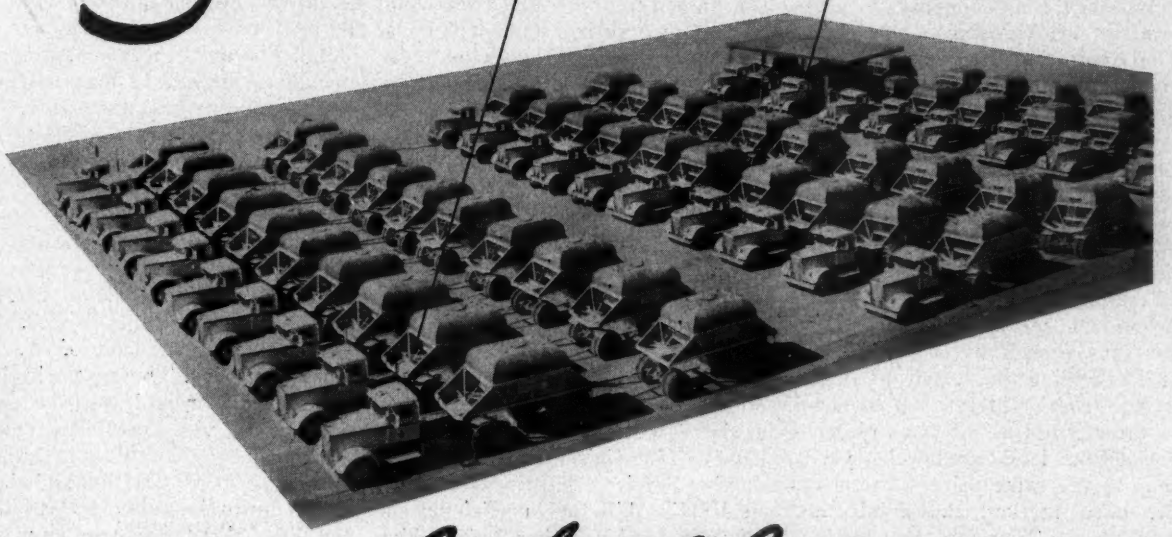
Deserving boys who would not otherwise be able to go to a summer camp are selected each year with the assistance of youth groups and government agencies throughout the State. The boys who are selected enjoy a free two week vacation at the high Sierra camp. Over 300 boys will be guests at the camp during 1955. While there, the boys will enjoy horseback riding, fishing, swimming, hiking and other outdoor sports, with the accent on building good health, character and citizenship.

The camp was built in 1949 with volunteer help from men in the oil industry. It is operated as a nonprofit corporation and is wholly dependent for funds upon the donations made by men and women in the Southern California oil industry. Administration of the camp is handled by a board of directors composed of men from all branches of the oil industry.

Los Angeles Group Take Nevada Acres

Carl G. Grabe, Robert J. Dunn and C. E. Anderson of Los Angeles, and Harry T. Cypher and E. J. Pickett of St. George, Utah, are assembling an interesting acreage block in Nevada. The property lies in Townships 17 and 18 south and Ranges 70 and 71 east in Clark County and about 32 miles south of highway 91 and three miles from the Arizona line. Upon completion the block will contain a total of 19,960 acres made up of two units. A. A. Carrey, leading geologist and engineer, lately studied and wrote a report on the area for the interested group.

Service ON PARADE



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For wells down to 5,000 feet

TYPE S MODIFIED
For wells down to 8,000 feet

TYPE D HI-TEMP
For wells over 8,000 feet

PERMATEMP
For abnormally high bottom hole temperatures

Here's the new insurance policy that guarantees Permanente's famed "On the Job, On Time" delivery service—the New Permanente lightweight Bulk Truck Fleet! Permanente now operates the largest Company owned fleet of bulk cement trucks in the West.

Specially designed and manufactured to Permanente's exacting specifications—these lightweight diesel powered rigs, built by two of the Nation's leading manufacturers of heavy-duty trucks, feature extensive use of aluminum in the tractors, trailers and bulk cement tanks—increasing pay load capacity to 143 barrels. They'll deliver over 8,000 lbs. more cement per trip than the older style trucks.

For Oil Well Cementing Companies whose cement requirements involve unusually diversified shipping schedules—with deliveries often slated for odd hours, day and night—this new equipment provides an insurance policy that guarantees ever better service to this highly specialized segment of the cement market; and backs up Oil Well Cementers in continuing the existing high quality service to their customers.

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With Drilling Contractors

Standard Oil Company of California's wholly-owned subsidiary, The California Company, has long been a leader in Gulf of Mexico drilling and also famed for the origination and application of many adept short cuts associated with offshore oil development. According to California Standard's quarterly published "Bulletin," the latest creation is a giant drilling rig, capable of taking down six 14,000-foot development wells at six different locations within the broad expanse of its drilling floor. Oil produced from offshore waters often costs up to three times as much as oil produced from land-based wells, yet it sells at the same price a barrel on the open market, the publication pointed out. Therefore, any method of cutting excessive cost of drilling beneath Gulf waters is of prime importance and of obvious encouragement to greater efforts to uncovering oil in offshore areas. Standard explained that due to the major expense of building a drilling platform in deep water, it had been the custom to drill many wells from a single platform. In the past, however, this has meant that every time a new hole was drilled, the entire rig, the drawworks, engines, tanks, pipe racks and other machinery must be skidded to a new location. In addition to the work and time occasioned, such skidding called for platforms of massive strength from great number of piles under every part of the deck. Like platforms constitute a big part of the total higher expense of offshore drilling, both from the standpoint of building and maintenance. With the new rig, when a well location is changed, nothing need be moved but the crown block, or pulleys, at the top of the well, the pipe racks and platform for the "high man" and the rotary table drive mechanism on the floor itself. Power from the drawworks is established by a system of interchangeable pulleys, shafts and chains. The Bulletin made clear that one well can be "flanged off" or completed with this new rig and another started within 12 hours. Designed by The California Company's engineers, all the work of development and installation of the big rig will be much more than returned in the reduction in offshore drilling costs.

One of the most popular members of the contract drilling industry is genial Tine Gaiser, founder and head of Tine Gaiser Drilling & Production Service Company at Bakersfield. His skill and proficiency is inherent as his father before him was a leading operator who won fame for shipping the first drilling equipment into Rumania before the turn of the century. Gaiser entered the contract business a dozen years ago and for more than 30 years has chalked up successful experience in most avenues of the petroleum industry. Beside his drilling interests, the Bakersfield contractor has a stake in production acquired by the Ferne Oil Company, a subsidiary organization named for Mrs. Gaiser. Officers of the drilling concern, in addition to Tine, include Glenn Meredith, business manager; L. G. Childers, general superintendent; and Mildred Foley, secretary.

Thomas P. Pike Drilling Company of Los Angeles currently is operating 14 rigs in California fields, President Stanwood I. Williams reported. They are working at Signal Hill, Inglewood, Newhall and Atwood. Also at Fillmore, Montalvo, Oxnard, Kettleman Hills, Coalinga, Guijarral Hills and Willows.

Pets enliven the day by day events at the two drilling camps maintained by Brown Drilling Company in Australia. The most recent count of the menagerie showed 12 dogs, five cats, one parrot, one goat and a filly. The filly wandered up one night to get warm between generator motors.

Growing drilling operations in 1955 but with not so many rigs were foreseen the other week at the API Chicago convention by A. W. Thompson, president of A. W. Thompson, Inc. Thompson, leading contract driller and the new API production vice president, made known this year's drilling is running more than 200,000,000 feet and above 1953's approximate 196,000,000 feet. He added that the footage next year should go some 10,000,000 higher than this year. Interesting is the fact that although wells are going deeper, costs are being held steady by cutting drilling time. On this point, Thompson said where it once took 120 days to drill a field well, it now takes but 85 to 90 days. Better men, material and rigs were credited with bringing about the reduction in drilling time. Indications are that the drilling industry this year is using about 250 rigs less than in 1953 and next year will use 50 to 100 still fewer outfits, despite the multiplying drilling footage. The Thompson Company is mainly operating rotary power rigs in West Texas, New Mexico and the Rocky Mountain area.

K. L. Kellogg & Sons of Compton has been let contract to run final tests of Ohio Oil Company's 21,482-foot world's record depth well in the Paloma field. Tests are centered on 1500 to 2000 feet uphole from plug at 13,738 feet. Work probably will be concluded this year.

Field Development

Winters Area In Line For New Test

Exploration drilling is about to be initiated by E. A. Bender's Putthoff No. 1 well on Section 7-8n-1e and east of the Winters gas field in Yolo County. To Shell goes credit for opening the field in 1946 with a well that went to about 5530 feet on Section 28-8n-1e for a primary yield of something like 12,000,000 cubic feet of gas every 24 hours.

Goodyear Test Set In Motion

On the way down is Parish Brothers' No. 1 wildcat test on Section 17-3n-2w in the Goodyear area in Solano County. Newton Drilling Company is putting the project down. Kemnitzer, Richards and Diepenbrock is in charge of engineering.

Willows Field Job Digs Ahead

With Thomas P. Pike Drilling Company doing the work, the Thornbury & Geis, Operator, Capco No. 78-7 well on Section 7-20n-2w in the Willows field of Glenn County continues to drill ahead. Depth last reported was 1200 feet or thereabouts.

Cat Canyon Well On Pump

MJM & M Oil Company's Thomas No. 88-X well on Section 15-9n-33w at Cat Canyon in Santa Barbara County has been completed pumping from the Sisquoc interval of 4779-4824 feet. The well is bottomed at 4860 feet. Representative gauge is not yet available, but the project showed enough on formation test some weeks ago to indicate success production-wise. In passing, it is of interest that the Sisquoc heretofore had not been tapped in this immediate sector. In the East Cat Canyon area, Slick-Moorman Production Company is preparing to drill its Palmer-Stendel No. 5 test on Section 24-9n-33w. Orville Stanford Drilling Company has been assigned the work.

San Miguelito Adds Production

Continental Oil Company in rich San Miguelito field in Ventura County, is the scene of two additional producing wells. Grubb No. 605 on Section 25-3n-24w came in from 11,325 feet for 245 barrels of 28.2 gravity oil a day and 116,000 cubic feet of gas daily. In use was a 20/64-inch orifice. Grubb No. 708 on Section 24-3n-24w started off from 13,340 feet at the rate of 533 barrels of 28.3 gravity oil, through a 24/64-inch choke, along with 116,000 cubic feet of gas a day. The former was taken down by Rocky Mountain Drilling Company, and the latter by Bell & Burden. Conoco has two other wells drilling in the field.

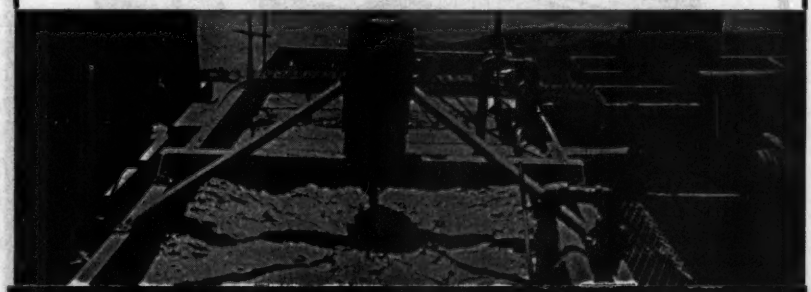
Torrey Canyon Well Drilling

Drilling has gone beyond the 4500-foot level in Union Oil's Torrey No. 97 well on Section 5-3n-18w in the Torrey Canyon field.

Union recently reported that company-operated production in California is running around 124,000 barrels a day, up 1000 barrels from a year ago. Thus, the company has more than offset the natural decline which is equal to about one per cent a month.

OUR ENGINEERS

are experienced specialists in California oil well drilling mud problems. They have years of on-the-job-know-how, plus a complete line of proven mud products with which to help you drill your oil wells.



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Union in all of its operating divisions in the United States and Canada produced crude oil in August of this year at a rate of 148,194 barrels daily.

Canoga Park Wildcat Digs

Drilling is going forward at a depth approximating 2200 feet with George Allen's Teddy No. 1 wildcat venture on Section 5-1n-17w in the Canoga Park area, Ventura County. In the West Mountain area, Shell Oil is about to spud its SPS No. 2 test on Section 29-3n-21w.

Timber Canyon Tests Starting

Richfield Oil Corporation has locations staked for two fresh test wells in the Timber Canyon area. Atlas-Smith No. 2 will be drilled on Section 14-4n-21w. Loel-Maxwell No. 2 will be put down on Section 18-4n-20w. In the vicinity of Ojai, Richfield has at present three drilling jobs at various operational stages. They are Ojai No. 72 on Section 13 and Ojai No. 73 and No. 74 on Section 14-4n-22w.

Jesus Maria Well Abandoned

Union Oil Company has recorded an abandonment in the Jesus Maria field, Santa Barbara County, with its No. 28-12 well on Section 12-8n-35w. Nothing of interest appears to have been picked up to a bottom of 4174 feet. In the Camarillo Hills in Ventura County, Union's Tassano No. 1 wildcat on Section 23-2n-21w is being redrilled and deepened. The well went originally to 6405 feet.

Oxnard Work Keeps Widening

The Texas Company's Capital-Silva No. 1 wildcat, designed to go deep down on Section 8-1n-21w at Oxnard, is drilling in the shallower formations. Contractor is K. L. Kellogg & Sons. In the East Oxnard sector, Standard Oil's Mulhardt Community No. 101 on Section 1-1n-22w was last reported below 7700 feet.

Sespe Test Drills Ahead

On Section 28-5n-19w at Sespe in Ventura County, MacDonald Lynch is digging ahead at 700 feet with his Lynch-Sespe No. 28-1 wildcat test,

G. P. land man Parke Jackson, left, discusses a lease with San Joaquin Valley rancher A. H. Walker. Administering leases is one of land man's most important functions.

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after completing a minor fishing job. Pacific Supply Cooperative, Inc., Nathan No. 1 wildcat on Section 23-5n-20w is drilling not much above 4000 feet.

Rosedale Wildcat Drilling Steadily

Drilling is well under way with CKM Oil Company's Rosedale Station KCL No. 1 wildcat well on Section 13-29s-26e, Kern County. Location is roughly a half-mile directly east of the Santa Fe Railroad's Rosedale station, eight miles northeast of Bakersfield and three-fourths of a mile east of Humble Oil & Refining Company's production. CKM, a partnership of A. N. Campbell, H. S. Kohlbush and H. C. Morton, based the play upon geophysical work hoping to find a structure up against a northwest-southeast fault. The target is sand in the Stevens expected in this sector between 5000 and 5500 feet. Humble is a participant in the play and is represented by land on both sides of the CKM venture. Western Gulf Oil Company also shares in the play with ground to the northeast. In addition, Monterey Oil Company is linked to the area with several parcels. The test is going forward on about 570 acres of ground held by CKM and leased from Kern County Land Company. Contractor is McNee Oil Company. In the Rosedale field, Standard Oil of California has set in motion its KCL 34 No. 38-26 on Section 36-28s-26e. The company's KCL 31 No. 43-1 on Section 1-29s-26e is in from 4240 feet for 165 barrels of 16.8 gravity oil, cutting initially 9.8 per cent, along with 150,000 cubic feet of gas a day.

Strand Wildcat Goes Into Discard

The E. L. Doheny, Operator, KCL No. 51 wildcat test on Section 9-30s-25e in the Strand area of Kern County has gone off the board at 4960 feet. On formation test of the interval of 4030-4089 feet, recovery was made up of 3985 feet of salt water, approximately 10 per cent mud.

Bender Drilling Kern County Test

A dozen miles southwest of Bakersfield and no great distance from the Strand field, E. A. Bender is drilling near an intermediate level with his

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KCL No. 37-7 wildcat well on Section 7-30s-26e, Kern County. The drill site is a couple of locations south of Tide Water Associated and Continental Oil's KCL No. 37, which brought the field to productive life 15 years ago. The drilling chores are in the capable hands of Fowler Drilling Company.

Tejon Ranch Adds Ninth Olcese Well

With nine wells already completed and flowing from the Olcese sand, the Tejon Ranch is about to add a number of other producers from this lately discovered zone in that part of Kern County. Reserve Oil and Gas Company's Reserve-Edwin W. Pauley No. 47-27 and No. 56-27 on Section 27-11n-19w are both getting the final touches. No. 21-34 on Section 34-11n-19w should follow in short order. Jesse M. Butler and Robert K. Long's Butler-Long No. 15-27 wildcat on Section 27 is making hole below 4600 feet. Lake Oil Company's Crane No. 1 test on Section 34 continues to drill at 4800 feet, plus or minus.

Vallecitos Test Started

Work has been initiated on Hedges-Smith-Erlich's No. 54X-5 wildcat project on Section 5-17s-11e in San Benito County's Vallecitos area.

Deer Creek Wells Staked

There are at present three additional drilling jobs about to get going in the Deer Creek field in Tulare County. They are Homer F. West's Zola B. Moore No. 1 on Section 22-22s-27e, and McGreevey Neary Oil Company's Hastings No. 1 and Holzworth No. 1 on Section 27-22s-27e. The latter's TBID No. 3 on the section was last reported bailing from total depth of 942 feet.

Fruitvale Field Adds New Producers

Drilled to a total depth of 3885 feet, Norbel Oil Company's KCL No. 56 on Section 15-29s-27e in the Fruitvale field has been completed for 50 barrels of 17 gravity oil a day, with an initial cut of close to 50 per cent. On Section 22-29s-27e, Western Gulf Oil Company's KCL B No. 56 is in

from 4350 feet pumping 75 barrels of 21.4 gravity oil daily. The company's next Fruitvale job will be Red Ribbon Ranch No. 45 on Section 27-29s-27e. King Petroleum Company is about to kick off with KCL No. 2-B on Section 11, and Golden Bear Oil Company with Armstrong No. 2 on Section 28.

Edison Test Moving Ahead

Mark Morris is digging ahead below 800 feet with his SP-Jacques No. 1 test on Section 31-29s-30e in the Edison area. On Section 27-30s-29e, Falcon Drilling & Associates is redrilling an old well, carried originally to 4532 feet.

Woodville Test Near Objective

Ajax Oil & Development Company and La Gorce Oil Company's Neil No. 1 exploratory venture on Section 32-20s-26e in Tulare County is not far above objective depth of approximately 3500 feet. The project, in the Woodville area near Porterville, is on a spread of some 3000 acres, put together by A. M. Van Flick, who is handling engineering on the Woodville activity. Ajax is a Brush, Colo., company. La Gorce headquarters are in St. Paul, Minn. Enterprise Oil Company as contractor is guiding the well to destiny. East of Kingsburg, Agoil Company's Agoil No. 2 wildcat on Section 28-16s-23e is still idle at 2495 feet.

Cuyama Wildcat Suspends Operations

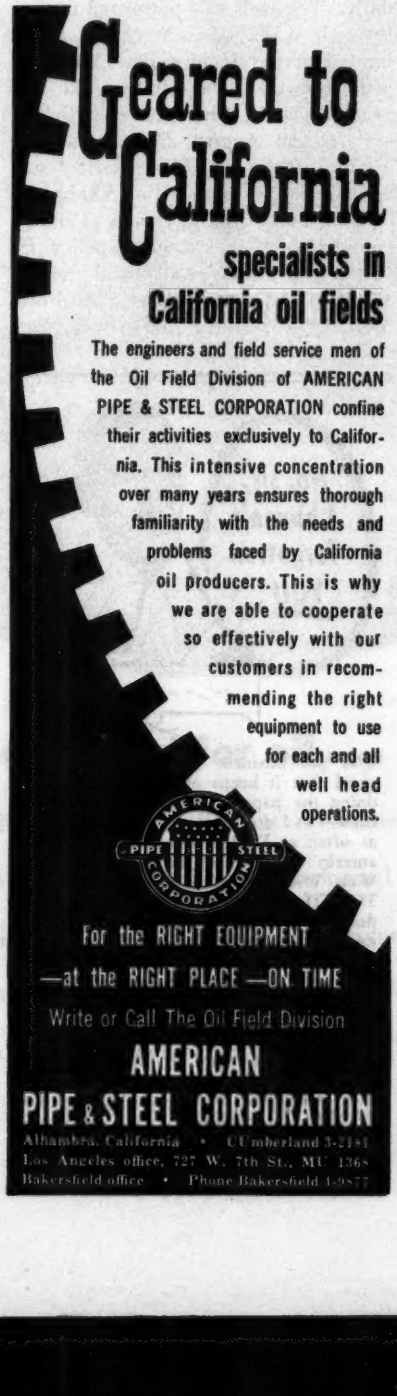
Drilling operations have been suspended for a time at least at 7020 feet in the George J. Greer, Operator, Bandini No. 51-17 test on Section 17-9n-26w in the South Cuyama area. C. W. Colgrove's Cuyama Valley wildcat, Mettler No. 64-16 on Section 16-10n-25w is drilling under 4000 feet. On the way is the Howard Zellers, Operator, McPherson No. 1 explorer on Section 21-10n-27w.

Salt Creek Project Digs

Drilling has reached an intermediate stage in E. C. Reid's Western No. 1 Phacoides test well on Section 13-29s-20e at Salt Creek. Engineering is in the hands of Tom Fitzgerald.

McKittrick Area Active

Ferguson & Bosworth is about to spud McLennan No. 1-18 test on Section 18-30s-22e in the McKittrick area. McKittrick No. 2 on the section has been the recent object of pump tests above plug at 895 feet. Total bottom is 1851 feet. In the vicinity of the Lost Hills field, F. & B. has abandoned Theta No. 1-14 on Section 14-26s-20e at 2756 feet.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Guijarral Hills Deeper Test Scene

Approximately a half-mile east of wells putting out in the Guijarral Hills field, the Los Nietos Company, Operator, Bourdieu No. 55-1 deep test well is moving ahead in the earlier stages on Section 1-21s-16e, Fresno County. The project may be carried as deep as 14,000 feet for a look at formation of Cretaceous age. Los Nietos recently completed its Guijarral Service No. 38-22 test on Section 22-20s-16e at 9746 feet for a present yield of 500,000 cubic feet of gas and an estimated nine barrels of condensate a day. The Guijarral Hills field is giving oil from the Allison and Leda sands slightly below 8000 feet and the deeper wildcat is attracting interest from both within and outside the drilling industry. Another interesting Fresno County test in motion is Artnell Oil & Gas Company's Cantua Lands No. 72 on Section 22-17s-15e.

Race Track Hill Wildcat Completed

Pacific Oil & Gas Development Corporation's Bender-Portals No. 84-A-5 test on Section 5-30s-29e in the Race Track Hill-Edison area has been completed for an initial output of 15 barrels of 15.2 gravity oil a day. The venture was carried to a bottom of 2329 feet and after the Santa Margarita sand in the interval of 2284-2316 feet tested wet, it was plugged back to 2130 feet and gun perforated from 1750 to 1760 feet in the Chanac.

Maricopa Well Placed On Pump

Directors Oil Company has placed on production for an estimated 100 barrels of oil a day its No. 12 well on Section 2-11n-24w in the Maricopa area. The project is credited as the first completion relatively deeper than other producers in the sector. Walter S. Clute was in charge of geology and engineering on the well, which appears to be tapping a sand delineated along the axis of 35 anticline by Standard Oil and General Petroleum some months ago. What the sand could do down-structure was not known until Directors drilled No. 12. On Section 32-12n-24w, Moriqui Exploration Company has abandoned its Dougherty No. 82-32 wildcat at 3947 feet.

South Greeley Wildcat Drills

Terminal Oil Company is operator and Terminal Drilling is contractor on Elrich Community No. 1 wildcat well making hole several hundred feet below grass roots on Section 20-29s-26e on land south of the Greeley field. Geology is in the hands of J. Q. Anderson.

Wheeler Ridge Test Interesting

Richfield Oil Corporation has run 9 5/8-inch protection string to 8487 feet in its San Emidio No. B-2 test on Section 31-11n-20w, one and one-half miles southwest of the Wheeler Ridge field. The project is down near 11,400 feet and appears to have production from the Eocene formation.

Madera County Explorer Quits

Suspended at 3200 feet was the final order on the W. W. Holmes, Operator, Redman-Rodunor No. 1-32 test on Section 32-10s-14e in the Chowchilla area, Madera County. On formation test of the interval of 3015-3045 feet, some gas surfaced in three minutes, then the well evidently staged some sort of a blowout and sanded up.

Alferitz Field Development Steady

Continuing orderly development of the Alferitz field in Kern and King Counties, Gilliland Oil Company is drilling below 1200 feet with its Miller Unit No. 8 on Section 3-25s-18e. Location for Miller Unit No. 9 has been made on Section 10-25s-18e. Miller No. 4, on Section 3-25s-18e, has been shut in at a plugged depth of 1170 feet. Original bottom is 2215 feet.

San Luis Obispo Wildcats Active

In the Huasna area of the San Luis Obispo County, the Richard S. Rheem, Operator, Richfield-Kerckhoff No. 33X-24 wildcat on Section 24-32s-15e has reached 2000 feet and is going on down. Contractor is Kee & Simpson. Other operators active in the county, include Shell, California Valley Oil Company and Daniel Fisher.

Kern River Wells Listed

A brace of well locations has been staked by West Crude Oil Company in the Kern River field. They are Comet No. 1-A and No. 13-A on Section 28-28s-28e.

New Zone Tapped On Studio Property

Universal Consolidated Oil Company has completed its Twentieth Century-Fox No. 3 well on Section 25-1s-15w in the Beverly field flowing 80 barrels a day of 37 gravity oil and more than 1,000,000 cubic feet of gas daily. The well was permitted to flow through a 12/64-inch choke for a limited period from a new 5300-foot zone and then was shut-in like two previous wells, which came in February 16 and August 23 from a zone around 7000 feet. These earlier successes produced upward of 500 barrels of 24 gravity oil a day each. Pending completion of permanent pipeline facilities the three wells will remain shut-in. The company has started preliminary work on a fourth well. Sun Drilling Company is contract driller on Universal's wells.

You see business has been so darned good that it keeps me kinda tied down doing the paper work, and running the show—so I don't get out in the oil patch as often as I'd like to. ★ And it's sure amazin' how we've been selling those Web Wilson Tongs, Elevators, TIGER TOOTH Tong Dies A-N-D that super-dooper HYDRA HOOK. ★ I've got some mighty good boys to give you real service, and I hope you'll call 'em when you need anything . . . there's Wally Hayes in the Valley, at Bakersfield FAirview 2-2376—and George Winterburn at Santa Paula 613ML. ★ They are easy to get acquainted with, so until I can get around to sey "hello", just call any of them if you need something. Thanks a lot.

Ed. Slaughter

Corona Test Drilling Ahead

North Star Mining & Development Company is reported at an intermediate drilling stage with its North Star-Temescal No. 1 wildcat venture on Section 2-5s-6w near Corona in Riverside County. In the Prado Dam area, Al Godfrey Drilling Company's wildcat on Section 29-3s-7w is down 4725 feet and in recent weeks has been the object of a series of tests.

Los Angeles County Wildcats Drilling

On Section 17-4n-15w in the Soledad Canyon area of Los Angeles County, The B. B. Breckenridge, Operator, Wadley No. 1 wildcat continues to drill ahead below 1000 feet. In the Pico Canyon area, Cormac Drilling & Production Company's Cormac No. 1 test on Section 6-3n-16w is drilling on down near 1200 feet. With Richard S. Rheem as operator the Happy Valley Unit No. E-1 on Section 3-3n-16w in the vicinity of Newhall at last reports was several hundred feet below grass roots.

Union Oil Begins Basin Wildcat Wells

Union Oil Company's latest tests to open work in Los Angeles Basin areas are Hellman No. 67 on Section 27-3s-13w in the Dominguez area, and Sansinena No. 12-G-1 on Section 31-2s-10w. In the Dominguez field proper, Union's Callender No. 131 on Section 28-3s-13w has been finaled at 8089 feet for a current yield of 76 barrels of 38.2 gravity oil, through a 12/64-inch bean, along with 801,000 cubic feet of gas a day. Cut was 7.2 per cent.

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"Why?" he asked hopefully.

"For one thing, snapped Gayle, "he's been dead for years!"

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Marvin: "Why doesn't she have 'em insured?"

Melvin: "Well, she's got a better system than that. I came home last night and found a fella in her clothes closet, guarding 'em?"

"I asked her if she was doing anything that evening and she said she wasn't so I took her out and sure enough—she wasn't."

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"Well, you know how it is," said the other. "Business is like sex. When it's good, it's wonderful. When it's bad—it's still pretty good."

"One thing I have learned in my long experience with the fair sex," said the sly looking one to his drinking companion, "is that you can't trust a woman with brown eyes!"

"Say," exclaimed the other, "I've been married for two years and it occurs to me that I don't know what color eyes my wife has."

He bolted from the bar and whipped home. His wife was in bed asleep. Creeping closer, he lifted her eyelid.

"Brown, by gosh!" he roared.

Brown crawled out from under the bed and said, "How the devil did you know I was under here?"

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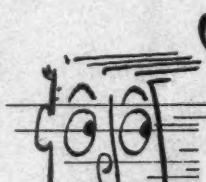
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